

Ala Phe Gly Gly Asp Ile Val Phe Lys Gly Asn Ser Ser Phe Arg Ala
 225 230 235 240
 Gln Gly Ser Asp Ala Ile Tyr Phe Ala Gly Lys Glu Ser His Ile Thr
 245 250 255
 Ala Leu Asn Ala Thr Glu Gly His Ala Ile Val Phe His Asp Ala Leu
 260 265 270
 Val Phe Glu Asn Leu Lys Glu Arg Lys Ser Ala Glu Val Leu Leu Ile
 275 280 285
 Asn Ser Arg Glu Asn Pro Gly Tyr Thr Gly Ser Ile Arg Phe Leu Glu
 290 295 300
 Ala Glu Ser Lys Val Pro Gln Cys Ile His Val Gln Gln Gly Ser Leu
 305 310 315 320
 Glu Leu Leu Asn Gly Ala Thr Leu Cys Ser Tyr Gly Phe Lys Gln Asp
 325 330 335
 Ala Gly Ala Lys Leu Val Leu Ala Ala Gly Ser Lys Leu Lys Ile Leu
 340 345 350
 Asp Ser Gly Thr Pro Val Gln Gly His Ala Ile Ser Lys Pro Glu Ala
 355 360 365
 Glu Ile Glu Ser Ser Ser Glu Pro Glu Gly Ala His Ser Leu Trp Ile
 370 375 380
 Ala Lys Asn Ala Gln Thr Thr Val Pro Met Val Asp Ile His Thr Ile
 385 390 395 400
 Ser Val Asp Leu Ala Ser Phe Ser Ser Ser Gln Gln Glu Gly Thr Val
 405 410 415
 Glu Ala Pro Gln Val Ile Val Pro Gly Gly Ser Tyr Val Arg Ser Gly
 420 425 430
 Glu Leu Asn Leu Glu Leu Val Asn Thr Thr Gly Thr Gly Tyr Glu Asn
 435 440 445
 His Ala Leu Leu Lys Asn Glu Ala Lys Val Pro Leu Met Ser Phe Val
 450 455 460
 Ala Ser Ser Asp Glu Ala Ser Ala Glu Ile Ser Asn Leu Ser Val Ser
 465 470 475 480
 Asp Leu Gln Ile His Val Ala Thr Pro Glu Ile Glu Glu Asp Thr Tyr
 485 490 495
 Gly His Met Gly Asp Trp Ser Glu Ala Lys Ile Gln Asp Gly Thr Leu
 500 505 510
 Val Ile Asn Trp Asn Pro Thr Gly Tyr Arg Leu Asp Pro Gln Lys Ala
 515 520 525
 Gly Ala Leu Val Phe Asn Ala Leu Trp Glu Glu Gly Ala Val Leu Ser
 530 535 540
 Ala Leu Lys Asn Ala Arg Phe Ala His Asn Leu Thr Ala Gln Arg Met
 545 550 555 560
 Glu Phe Asp Tyr Ser Thr Asn Val Trp Gly Phe Ala Phe Gly Gly Phe
 565 570 575
 Arg Thr Leu Ser Ala Glu Asn Leu Val Ala Ile Asp Gly Tyr Lys Gly
 580 585 590
 Ala Tyr Gly Gly Ala Ser Ala Gly Val Asp Ile Gln Leu Met Glu Asp
 595 600 605
 Phe Val Leu Gly Val Ser Gly Ala Ala Phe Leu Gly Lys Met Asp Ser
 610 615 620
 Gln Lys Phe Asp Ala Glu Val Ser Arg Lys Gly Val Val Gly Ser Val
 625 630 635 640
 Tyr Thr Gly Phe Leu Ala Gly Ser Trp Phe Phe Lys Gly Gln Tyr Ser
 645 650 655
 Leu Gly Glu Thr Gln Asn Asp Met Lys Thr Arg Tyr Gly Val Leu Gly
 660 665 670
 Glu Ser Ser Ala Ser Trp Thr Ser Arg Gly Val Leu Ala Asp Ala Leu
 675 680 685
 Val Glu Tyr Arg Ser Leu Val Gly Pro Val Arg Pro Thr Phe Tyr Ala
 690 695 700
 Leu His Phe Asn Pro Tyr Val Glu Val Ser Tyr Ala Ser Met Lys Phe

705 710 715 720
 Pro Gly Phe Thr Glu Gln Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala
 725 735
 Ser Leu Thr Asn Ile Thr Ile Pro Leu Gly Met Lys Phe Glu Leu Ala
 740 745 750
 Phe Ile Lys Gly Gln Phe Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr
 755 760 765
 Ala Trp Glu Ala Tyr Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu
 770 775 780
 Glu Ala Gly Phe Asp Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln
 785 790 795 800
 Glu Leu Arg Val Ala Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe
 805 810 815
 Ser Thr Val Leu Gly Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr
 820 825 830
 Asp Ser Lys Leu Gly Tyr Glu Ala Asn Thr Gly Leu Arg Ile Phe
 835 840 845

<210> 193

<211> 778

<212> PRT

<213> Chlamydia

<400> 193

Met His His His His His Gly Leu Ala Ser Cys Val Asp Leu His
 1 5 10 15
 Ala Gly Gly Gln Ser Val Asn Glu Leu Val Tyr Val Gly Pro Gln Ala
 20 25 30
 Val Leu Leu Leu Asp Gln Ile Arg Asp Leu Phe Val Gly Ser Lys Asp
 35 40 45
 Ser Gln Ala Glu Gly Gln Tyr Arg Leu Ile Val Gly Asp Pro Ser Ser
 50 55 60
 Phe Gln Glu Lys Asp Ala Asp Thr Leu Pro Gly Lys Val Glu Gln Ser
 65 70 75 80
 Thr Leu Phe Ser Val Thr Asn Pro Val Val Phe Gln Gly Val Asp Gln
 85 90 95
 Gln Asp Gln Val Ser Ser Gln Gly Leu Ile Cys Ser Phe Thr Ser Ser
 100 105 110
 Asn Leu Asp Ser Pro Arg Asp Gly Glu Ser Phe Leu Gly Ile Ala Phe
 115 120 125
 Val Gly Asp Ser Ser Lys Ala Gly Ile Thr Leu Thr Asp Val Lys Ala
 130 135 140
 Ser Leu Ser Gly Ala Ala Leu Tyr Ser Thr Glu Asp Leu Ile Phe Glu
 145 150 155 160
 Lys Ile Lys Gly Gly Leu Glu Phe Ala Ser Cys Ser Ser Leu Glu Gln
 165 170 175
 Gly Gly Ala Cys Ala Ala Gln Ser Ile Leu Ile His Asp Cys Gln Gly
 180 185 190
 Leu Gln Val Lys His Cys Thr Thr Ala Val Asn Ala Glu Gly Ser Ser
 195 200 205
 Ala Asn Asp His Leu Gly Phe Gly Gly Ala Phe Phe Val Thr Gly
 210 215 220
 Ser Leu Ser Gly Glu Lys Ser Leu Tyr Met Pro Ala Gly Asp Met Val
 225 230 235 240
 Val Ala Asn Cys Asp Gly Ala Ile Ser Phe Glu Gly Asn Ser Ala Asn
 245 250 255
 Phe Ala Asn Gly Gly Ala Ile Ala Ala Ser Gly Lys Val Leu Phe Val
 260 265 270
 Ala Asn Asp Lys Lys Thr Ser Phe Ile Glu Asn Arg Ala Leu Ser Gly
 275 280 285
 Gly Ala Ile Ala Ala Ser Ser Asp Ile Ala Phe Gln Asn Cys Ala Glu

290	295	300
Leu Val Phe Lys Gly Asn Cys Ala Ile Gly Thr Glu Asp Lys Gly Ser		
305	310	315
Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly		
	325	330
Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly		
	340	345
Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val		
	355	360
Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala		
	370	375
Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu		
	385	390
Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser		
	405	410
Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn		
	420	425
Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu		
	435	440
Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe Gly Glu Asn Ile		
	450	455
Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val		
	465	470
Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu		
	485	490
Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe		
	500	505
Thr Gly Asn Ala Arg Ala Pro Glu Ala Leu Pro Thr Gln Glu Glu Phe		
	515	520
Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser		
	530	535
Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala		
	545	550
Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala		
	565	570
Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser		
	580	585
Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala		
	595	600
Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln		
	610	615
Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu		
	625	630
Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp		
	645	650
Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly		
	660	665
Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly		
	675	680
Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu		
	690	695
Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp		
	705	710
Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr		
	725	730
Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro		
	740	745
Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala		
	755	760
Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys		
770	775	

<210> 194
 <211> 948
 <212> PRT
 <213> Chlamydia

<400> 194

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Met Ala Ser Met His His His His His His Val Lys Ile Glu Asn Phe
1      5      10      15
Ser Gly Gln Gly Ile Phe Ser Gly Asn Lys Ala Ile Asp Asn Thr Thr
20
Glu Gly Ser Ser Ser Lys Ser Asn Val Leu Gly Gly Ala Val Tyr Ala
35      40      45
Lys Thr Leu Phe Asn Leu Asp Ser Gly Ser Ser Arg Arg Thr Val Thr
50      55      60
Phe Ser Gly Asn Thr Val Ser Ser Gln Ser Thr Thr Gly Gln Val Ala
65      70      75      80
Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Thr Ile Ala Thr Pro Val Val
85      90      95
Phe Ser Lys Asn Ser Ala Thr Asn Asn Ala Asn Asn Ala Thr Asp Thr
100      105      110
Gln Arg Lys Asp Thr Phe Gly Gly Ala Ile Gly Ala Thr Ser Ala Val
115      120      125
Ser Leu Ser Gly Gly Ala His Phe Leu Glu Asn Val Ala Asp Leu Gly
130      135      140
Ser Ala Ile Gly Leu Val Pro Asp Thr Gln Asn Thr Glu Thr Val Lys
145      150      155      160
Leu Glu Ser Gly Ser Tyr Tyr Phe Glu Lys Asn Lys Ala Leu Lys Arg
165      170      175
Ala Thr Ile Tyr Ala Pro Val Val Ser Ile Lys Ala Tyr Thr Ala Thr
180      185      190
Phe Asn Gln Asn Arg Ser Leu Glu Glu Gly Ser Ala Ile Tyr Phe Thr
195      200      205
Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser Val Leu Phe Thr Gly Asn
210      215      220
Leu Val Thr Pro Thr Leu Ser Thr Thr Thr Glu Gly Thr Pro Ala Thr
225      230      235      240
Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala Ala Ile Phe Gly Gln Ile
245      250      255
Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn Leu Pro Leu Lys Leu Ile
260      265      270
Ala Ser Gly Asn Ile Cys Phe Arg Asn Asn Glu Tyr Arg Pro Thr
275      280      285
Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys Ser Ile Ala Gly Asp Val
290      295      300
Lys Leu Thr Met Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp
305      310      315      320
Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly Thr Gln Ala Thr Ala Tyr
325      330      335
Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser Glu Thr Val Asn Ser
340      345      350
Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser Glu Leu His Glu Asn Lys
355      360      365
Ser Tyr Ile Pro Gln Asn Val Val Leu His Ser Gly Ser Leu Val Leu
370      375      380
Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe Glu Gln Lys Glu Gly
385      390      395      400
Ser Ser Leu Val Met Thr Pro Gly Ser Val Leu Ser Asn Gln Thr Val
405      410      415
Ala Asp Gly Ala Leu Val Ile Asn Asn Met Thr Ile Asp Leu Ser Ser
420      425      430

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Val Glu Lys Asn Gly Ile Ala Glu Gly Asn Ile Phe Thr Pro Pro Glu
 435 440 445
 Leu Arg Ile Ile Asp Thr Thr Ser Gly Ser Gly Gly Thr Pro Ser
 450 455 460
 Thr Asp Ser Glu Ser Asn Gln Asn Ser Asp Asp Thr Lys Glu Gln Asn
 465 470 475 480
 Asn Asn Asp Ala Ser Asn Gln Gly Glu Ser Ala Asn Gly Ser Ser Ser
 485 490 495
 Pro Ala Val Ala Ala His Thr Ser Arg Thr Arg Asn Phe Ala Ala
 500 505 510
 Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro Thr Ala Thr Thr Thr
 515 520 525
 Ser Asn Gln Val Ile Leu Gly Gly Glu Ile Lys Leu Ile Asp Pro Asn
 530 535 540
 Gly Thr Phe Phe Gln Asn Pro Ala Leu Arg Ser Asp Gln Gln Ile Ser
 545 550 555 560
 Leu Leu Val Leu Pro Thr Asp Ser Ser Lys Met Gln Ala Gln Lys Ile
 565 570 575
 Val Leu Thr Gly Asp Ile Ala Pro Gln Lys Gly Tyr Thr Gly Thr Leu
 580 585 590
 Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly Thr Ile Ser Ala Leu Trp
 595 600 605
 Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr Val Pro Arg Asp Asn His
 610 615 620
 Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Met Ser Met Val Thr Val
 625 630 635 640
 Lys Gln Gly Leu Leu Asn Asp Lys Met Asn Leu Ala Arg Phe Asp Glu
 645 650 655
 Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly Leu Gly Thr Met Leu Ser
 660 665 670
 Gln Val Gly Thr Pro Thr Ser Glu Glu Phe Thr Tyr Tyr Ser Arg Gly
 675 680 685
 Ala Ser Val Ala Leu Asp Ala Lys Pro Ala His Asp Val Ile Val Gly
 690 695 700
 Ala Ala Phe Ser Lys Met Ile Gly Lys Thr Lys Ser Leu Lys Arg Glu
 705 710 715 720
 Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr Ser Tyr Gln Ala Ser Val
 725 730 735
 Tyr Gly Gly Lys Pro Phe His Phe Val Ile Asn Lys Lys Thr Glu Lys
 740 745 750
 Ser Leu Pro Leu Leu Leu Gln Gly Val Ile Ser Tyr Gly Tyr Ile Lys
 755 760 765
 His Asp Thr Val Thr His Tyr Pro Thr Ile Arg Glu Arg Asn Gln Gly
 770 775 780
 Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala Leu Arg Val Ser Ser Val
 785 790 795 800
 Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys Arg Ile Thr Val Tyr Gly
 805 810 815
 Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr Glu Thr Glu
 820 825 830
 Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr Tyr Arg Asn Leu Ala Ile
 835 840 845
 Pro Met Gly Leu Ala Phe Glu Gly Glu Leu Ser Gly Asn Asp Ile Leu
 850 855 860
 Met Tyr Asn Arg Phe Ser Val Ala Tyr Met Pro Ser Ile Tyr Arg Asn
 865 870 875 880
 Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser Ser Gly Glu Gly Gly Glu
 885 890 895
 Ile Ile Cys Gly Val Pro Thr Arg Asn Ser Ala Arg Gly Glu Tyr Ser
 900 905 910
 Thr Gln Leu Tyr Pro Gly Pro Leu Trp Thr Leu Tyr Gly Ser Tyr Thr

915
 Ile Glu Ala Asp Ala His Thr 920
 930
 Arg Met Thr Phe 935
 945
 925
 Met Asn Cys Gly Ala 940
 <210> 195
 <211> 821
 <212> PRT
 <213> Chlamydia
 <400> 195
 Met His His His His His Glu Ala Ser Ser Ile Gln Asp Gln Ile
 1 5 10 15
 Lys Asn Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln
 20 25 30
 Ala Phe Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala
 35 40 45
 Asp Ser Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg
 50 55 60
 Lys His Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val
 65 70 75 80
 Ser Ser Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala
 85 90 95
 Pro Ser Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn
 100 105 110
 Gly Gly Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln
 115 120 125
 Asp Ser Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe
 130 135 140
 Phe Gly Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn
 145 150 155 160
 Gly Gly Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys
 165 170 175
 Ser Leu Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val
 180 185 190
 Tyr Ala Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe
 195 200 205
 Ser Ser Asn Gly Gly Glu Gln Gly Gly Gly Ile Tyr Ser Glu Gln
 210 215 220
 Asp Met Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala
 225 230 235 240
 Ala Gly Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val
 245 250 255
 Leu Leu Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser
 260 265 270
 Thr Pro Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser
 275 280 285
 Ser Glu Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro
 290 295 300
 Ser Pro Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys
 305 310 315 320
 Ser Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn
 325 330 335
 Ile Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser
 340 345 350
 Cys Thr Asn Thr Asn Ser Leu Gln Phe Leu Lys Asn Ser Ala Gly Gln
 355 360 365
 His Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr
 370 375 380
 Thr Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe

385 390 395 400
 Ser Glu Asn Thr Ala Lys Gly His Gly Gly Gly Ile Cys Thr Asn Lys
 405 415
 Leu Ser Leu Ser Asn Leu Lys Thr Val Thr Leu Thr Lys Asn Ser Ala
 420 425 430
 Lys Glu Ser Gly Gly Ala Ile Phe Thr Asp Leu Ala Ser Ile Pro Thr
 435 440 445
 Thr Asp Thr Pro Glu Ser Ser Thr Pro Ser Ser Ser Pro Ala Ser
 450 455 460
 Thr Pro Glu Val Val Ala Ser Ala Lys Ile Asn Arg Phe Phe Ala Ser
 465 470 475 480
 Thr Ala Glu Pro Ala Ala Pro Ser Leu Thr Glu Ala Glu Ser Asp Gln
 485 490 495
 Thr Asp Gln Thr Glu Thr Ser Asp Thr Asn Ser Asp Ile Asp Val Ser
 500 505 510
 Ile Glu Asn Ile Leu Asn Val Ala Ile Asn Gln Asn Thr Ser Ala Lys
 515 520 525
 Lys Gly Gly Ala Ile Tyr Gly Lys Lys Ala Lys Leu Ser Arg Ile Asn
 530 535 540
 Asn Leu Glu Leu Ser Gly Asn Ser Ser Gln Asp Val Gly Gly Gly Leu
 545 550 555 560
 Cys Leu Thr Glu Ser Val Glu Phe Asp Ala Ile Gly Ser Leu Leu Ser
 565 570 575
 His Tyr Asn Ser Ala Ala Lys Glu Gly Gly Val Ile His Ser Lys Thr
 580 585 590
 Val Thr Leu Ser Asn Leu Lys Ser Thr Phe Thr Phe Ala Asp Asn Thr
 595 600 605
 Val Lys Ala Ile Val Glu Ser Thr Pro Glu Ala Pro Glu Glu Ile Pro
 610 615 620
 Pro Val Glu Gly Glu Glu Ser Thr Ala Thr Glu Asn Pro Asn Ser Asn
 625 630 635 640
 Thr Glu Gly Ser Ser Ala Asn Thr Asn Leu Glu Gly Ser Gln Gly Asp
 645 650 655
 Thr Ala Asp Thr Gly Thr Gly Val Val Asn Asn Glu Ser Gln Asp Thr
 660 665 670
 Ser Asp Thr Gly Asn Ala Glu Ser Gly Glu Gln Leu Gln Asp Ser Thr
 675 680 685
 Gln Ser Asn Glu Glu Asn Thr Leu Pro Asn Ser Ser Ile Asp Gln Ser
 690 695 700
 Asn Glu Asn Thr Asp Glu Ser Ser Asp Ser His Thr Glu Glu Ile Thr
 705 710 715 720
 Asp Glu Ser Val Ser Ser Ser Lys Ser Gly Ser Ser Thr Pro Gln
 725 730 735
 Asp Gly Gly Ala Ala Ser Ser Gly Ala Pro Ser Gly Asp Gln Ser Ile
 740 745 750
 Ser Ala Asn Ala Cys Leu Ala Lys Ser Tyr Ala Ala Ser Thr Asp Ser
 755 760 765
 Ser Pro Val Ser Asn Ser Ser Gly Ser Asp Val Thr Ala Ser Ser Asp
 770 775 780
 Asn Pro Asp Ser Ser Ser Ser Gly Asp Ser Ala Gly Asp Ser Glu Gly
 785 790 795 800
 Pro Thr Glu Pro Glu Ala Gly Ser Thr Thr Glu Thr Pro Thr Leu Ile
 805 810 815
 Gly Gly Gly Ala Ile
 820

<210> 196

<211> 525

<212> PRT

<213> Chlamydia

<400> 196

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Pro Leu Val Pro Arg Gly Ser
130          135          140
Pro Leu Pro Val Gly Asn Pro Ala Glu Pro Ser Leu Leu Ile Asp Gly
145          150          155          160
Thr Met Trp Glu Gly Ala Ser Gly Asp Pro Cys Asp Pro Cys Ala Thr
165          170          175
Trp Cys Asp Ala Ile Ser Ile Arg Ala Gly Tyr Tyr Gly Asp Tyr Val
180          185          190
Phe Asp Arg Val Leu Lys Val Asp Val Asn Lys Thr Phe Ser Gly Met
195          200          205
Ala Ala Thr Pro Thr Gln Ala Ile Gly Asn Ala Ser Asn Thr Asn Gln
210          215          220
Pro Glu Ala Asn Gly Arg Pro Asn Ile Ala Tyr Gly Arg His Met Gln
225          230          235          240
Asp Ala Glu Trp Phe Ser Asn Ala Ala Phe Leu Ala Leu Asn Ile Trp
245          250          255
Asp Arg Phe Asp Ile Phe Cys Thr Leu Gly Ala Ser Asn Gly Tyr Phe
260          265          270
Lys Ala Ser Ser Ala Ala Phe Asn Leu Val Gly Leu Ile Gly Phe Ser
275          280          285
Ala Ala Ser Ser Ile Ser Thr Asp Leu Pro Met Gln Leu Pro Asn Val
290          295          300
Gly Ile Thr Gln Gly Val Val Glu Phe Tyr Thr Asp Thr Ser Phe Ser
305          310          315          320
Trp Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr
325          330          335
Leu Gly Ala Glu Phe Gln Tyr Ala Gln Ser Asn Pro Lys Ile Glu Met
340          345          350
Leu Asn Val Thr Ser Ser Pro Ala Gln Phe Val Ile His Lys Pro Arg
355          360          365
Gly Tyr Lys Gly Ala Ser Ser Asn Phe Pro Leu Pro Ile Thr Ala Gly
370          375          380
Thr Thr Glu Ala Thr Asp Thr Lys Ser Ala Thr Ile Lys Tyr His Glu
385          390          395          400
Trp Gln Val Gly Leu Ala Leu Ser Tyr Arg Leu Asn Met Leu Val Pro
405          410          415
Tyr Ile Gly Val Asn Trp Ser Arg Ala Thr Phe Asp Ala Asp Thr Ile
420          425          430
Arg Ile Ala Gln Pro Lys Leu Lys Ser Glu Ile Leu Asn Ile Thr Thr
435          440          445
Trp Asn Pro Ser Leu Ile Gly Ser Thr Thr Ala Leu Pro Asn Asn Ser
450          455          460
Gly Lys Asp Val Leu Ser Asp Val Leu Gln Ile Ala Ser Ile Gln Ile
465          470          475          480

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Asn Lys Met Lys Ser Arg Lys Ala Cys Gly Val Ala Val Gly Ala Thr	
485 490 495	
Leu Ile Asp Ala Asp Lys Trp Ser Ile Thr Gly Glu Ala Arg Leu Ile	
500 505 510	
Asn Glu Arg Ala Ala His Met Asn Ala Gln Phe Arg Phe	
515 520 525	

<210> 197	
<211> 43	
<212> DNA	
<213> Chlamydia	
<400> 197	
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<210> 198	
<211> 34	
<212> DNA	
<213> Chlamydia	
<400> 198	
cagaacgcgt ttagaatgtc atacgagcac cgca	34
<210> 199	
<211> 6	
<212> DNA	
<213> Chlamydia	
<400> 199	
gcaatc	6
<210> 200	
<211> 34	
<212> DNA	
<213> Chlamydia	
<400> 200	
tgcaatcatg agttcgcaga aagatatataa aagc	34
<210> 201	
<211> 38	
<212> DNA	
<213> Chlamydia	
<400> 201	
cagagctagc ttaaaagatc aatcgcaatc cagtattc	38
<210> 202	
<211> 5	
<212> DNA	
<213> Chlamydia	
<400> 202	
caatc	5
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<211> 31	
<212> DNA	
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<400> 203	

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<210> 204
 <211> 31
 <212> DNA
 <213> Chlamydia

<400> 204
 cagaacgcgt ctagaatcgc agagcaattt c 31

<210> 205
 <211> 30
 <212> DNA
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<400> 205
 gtgcaatcat gattcctcaa ggaatttacg 30

<210> 206
 <211> 31
 <212> DNA
 <213> Chlamydia

<400> 206
 cagaacgcgt ttagaaccgg actttacttc c 31

<210> 207
 <211> 50
 <212> DNA
 <213> Chlamydia

<400> 207
 cagacatatg catcaccatc accatcacga ggcgagctcg atccaagatc 50

<210> 208
 <211> 40
 <212> DNA
 <213> Chlamydia

<400> 208
 cagaggtacc tcagatagca ctctctccta ttaaagtagg 40

<210> 209
 <211> 55
 <212> DNA
 <213> Chlamydia

<400> 209
 cagagctagc atgcatcacc atcaccatca cgttaagatt gagaacttct ctggc 55

<210> 210
 <211> 35
 <212> DNA
 <213> Chlamydia

<400> 210
 cagaggtacc ttagaatgtc atacgagcac cgcag 35

<210> 211
 <211> 36
 <212> DNA

<213> Chlamydia
 <400> 211
 cagacatatg catcaccatc accatcacgg gttagc 36
 <210> 212
 <211> 35
 <212> DNA
 <213> Chlamydia
 <400> 212
 cagaggtacc tcagctcctc cagcacactc tcttc 35
 <210> 213
 <211> 51
 <212> DNA
 <213> Chlamydia
 <400> 213
 cagagctagc catcaccatc accatcacgg tgctatttct tgcttacgtg g 51
 <210> 214
 <211> 38
 <212> DNA
 <213> Chlamydia
 <400> 214
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 <210> 215
 <211> 48
 <212> DNA
 <213> Chlamydia
 <400> 215
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 <210> 216
 <211> 31
 <212> DNA
 <213> Chlamydia
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 cagagaattc ctagaatcgc agagcaattt c 31
 <210> 217
 <211> 7
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 <213> Chlamydia
 <400> 217
 tgcaatc 7
 <210> 218
 <211> 22
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 <213> Chlamydia
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 1 5 10 15

Val Pro Ser Ser Asp Pro
20

<210> 219
<211> 51
<212> DNA
<213> Chlamydia

<400> 219
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<210> 220
<211> 33
<212> DNA
<213> Chlamydia

<400> 220
cagagcggcc gcttagaacc ggactttact tcc 33

<210> 221
<211> 24
<212> PRT
<213> Chlamydia

<400> 221
Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu
1 5 10 15
Val Pro His His His His His
20

<210> 222
<211> 46
<212> DNA
<213> Chlamydia

<400> 222
cagagctagc catcaccatc accatcacct ctttggccag gatccc 46

<210> 223
<211> 30
<212> DNA
<213> Chlamydia

<400> 223
cagaactagt ctagaacctg taagtgtcc 30

<210> 224
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 224
Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile
1 5 10 15
Ser Thr Asp Leu
20

<210> 225

<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 225
Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala
1 5 10 15
Val Ile Val Gly
20

<210> 226
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 226
His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly
1 5 10 15
Pro Met Pro Arg
20

<210> 227
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 227
Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr
1 5 10 15
Glu Ile Val Lys
20

<210> 228
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 228
Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys
1 5 10 15
Val Trp Glu Tyr
20

<210> 229
<211> 20
<212> PRT
<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 229

Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile
1 5 10 15
Lys Lys His Asn
20

<210> 230

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 230

Ile Lys Lys His Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu
1 5 10 15
Pro Asp Ala Asn
20

<210> 231

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 231

Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
1 5 10 15
Leu Ala Lys Val
20

<210> 232

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 232

Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe
1 5 10 15
Gly Ser Ser Asp
20

<210> 233

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 233

Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro
1 5 10 15

Ile Asp Met Phe
20

<210> 234
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 234
Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln
1 5 10 15
Met Thr Lys Ala
20

<210> 235
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 235
Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala Leu
1 5 10 15
Ser Lys His Ile Val Lys
20

<210> 236
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 236
Val Glu Ile Thr Gln Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro
1 5 10 15
Tyr Pro Val Glu
20

<210> 237
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 237
Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile
1 5 10 15
Thr Ala Thr Gly
20

<210> 238
<211> 20

<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 238
Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys
1 5 10 15
Arg Asp Cys Val
20

<210> 239
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 239
Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp
1 5 10 15
Val Ile Ile Thr
20

<210> 240
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 240
Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln
1 5 10 15
Gln. Leu Pro Cys Glu
20

<210> 241
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 241
Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu
1 5 10 15
Ala Glu Phe Val
20

<210> 242
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 242
Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg
1 5 10 15
Ser Asp Pro Ala
20

<210> 243
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 243
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala
1 5 10 15
Thr Thr Pro Thr
20

<210> 244
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 244
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala
1 5 10 15
Asp Gly Lys Leu
20

<210> 245
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 245
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val
1 5 10 15
Trp Lys Ile Asp
20

<210> 246
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 246
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
1 5 10 15
Leu Gly Gln Gly

20

<210> 247
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 247
Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu
1 5 10 15
Lys Ser Lys Ile
20

<210> 248
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 248
Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr
1 5 10 15
Val Trp Val Lys
20

<210> 249
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 249
Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro
1 5 10 15
Leu Lys Glu Gly
20

<210> 250
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 250
Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
1 5 10 15
Cys Cys Phe Thr
20

<210> 251
<211> 16
<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 251

Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
1 5 10 15

<210> 252

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 252

Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
1 5 10

<210> 253

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 253

Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
1 5 10 15

<210> 254

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 254

Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala
1 5 10 15
Phe Gly Val Leu
20

<210> 255

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 255

Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn
1 5 10 15
Pro Glu Gly Ser
20

<210> 256
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 256
Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
1 5 10 15
Ala Leu Arg Ala
20

<210> 257
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 257
Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr
1 5 10 15
Phe Leu Ile Asp
20

<210> 258
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 258
Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys
1 5 10 15
His Gly Val Ile
20

<210> 259
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 259
Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg
1 5 10 15
His Ala Val Ile
20

<210> 260
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 260
 Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1 5 10 15
 Asp Leu Pro Leu
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<210> 261
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 261
 Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1 5 10 15
 Arg Ser Ile Asp
 20

<210> 262
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 262
 Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1 5 10 15
 Glu Leu Arg Ile
 20

<210> 263
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> 604
 <223> n = A,T,C or G

<400> 263
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 acacagccca acaataaaat ggcaagggtta gtaataaaga cgaagggagt ggataaagat 120
 attaagggttg ccaagtcctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggtctct ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgctgc ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctccacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
 atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg caaaacogtt tcttcttcc caaactaaag caaatatggg atctctctgt 540
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcgnaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgcggg gagaggaaaa tgcttgcgag aagaaaagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttga atgcgttgcc 780

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gacgttttca aattgggtgcc gctgcctatt acaatgggta ttctgctgat tgtggctgct      840
ggatgtacgt tcactcttcgc aattattgga ttgtgcactt tctgcgccag agcataa      897

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<210> 264
<211> 298
<212> PRT
<213> Chlamydia

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<220>
<221> VARIANT
<222> 202
<223> Xaa = Any Amino Acid

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<400> 264
Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
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Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
          20          25          30
Lys Thr Lys Gly Val Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
          35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
          50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
          65          70          75          80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
          85          90          95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
          100          105          110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
          115          120          125
His Lys Arg Arg Ala Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
          130          135          140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
          145          150          155          160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
          165          170          175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
          180          185          190
Val Gly Ala Gly Leu Ala Ile Ser Ala Xaa Arg Ala Asp Cys Glu Ala
          195          200          205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
          210          215          220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
          225          230          235          240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
          245          250          255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
          260          265          270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
          275          280          285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
          290          295

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<210> 265
<211> 897
<212> DNA
<213> Chlamydia

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<220>
<221> misc_feature

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<222> 604

<223> n = A,T,C or G

<400> 265

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acacagccca acaataaaat gccaaaggta gtaataaaga cgaagggaat ggataagact      120
attaagggtg ccaagtctgc tgccgaattg accgcaaata ttttggaaac agctggaggc      180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga      240
actgtgtctg ctttagggaa tgcccttaac ggagcgttgc caggaacagt tcaaagtgcg      300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg      360
ctcacagcag atctttgtgt gtctcataag ccgagagcgg ctgcggctgt ctgtagcatc      420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgcacac      480
aaaatgctgg caaaaccgtt tcttctctcc caaactaaag caaatatggg atcttctgtt      540
agctatatta tggcggcctaa ccattgcagcg tctgtggtgg gtgctggact cgctatcagt      600
gcgnaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc      660
gaagtgcggg gagaggaata tgcttgcgag aagaaaagtcg ctggagagaa agccaagacg      720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc      780
gacgttttca aattgtgtcc gctgcctatt acaatgggta ttcgtcgat tgtgtcgtct      840
ggatgtacgt tcactctctgc aattattgga ttgtgcactt tctgcgccag agcataa      897

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<210> 266

<211> 298

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> 202

<223> Xaa = Any Amino Acid

<400> 266

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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1           5           10           15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20           25           30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35           40           45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50           55           60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65           70           75           80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85           90           95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100           105           110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115           120           125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130           135           140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145           150           155           160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165           170           175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180           185           190
Val Gly Ala Gly Leu Ala Ile Ser Ala Xaa Arg Ala Asp Cys Glu Ala
195           200           205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210           215           220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225           230           235           240

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<210> 271
 <211> 511
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> 447
 <223> n = A,T,C or G

<400> 271									
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tgttatcgat	agcttggttc	ccagagaact	gacaagtc	gctacatga	gagaatgtaa				180
cctgttctcc	atagatagct	cctcctacta	cacctgaata	agttgggtgt	gctggagatg				240
atggtgcggc	tgctgcggct	gottgtaggg	aagcagcagc	tgacagcaggt	gctgaagctg				300
ttgttgcgac	tcctgtggat	gaggagtttg	ctttgttgtt	cgagaaagag	aagcctgatt				360
tcagattaga	aataattaca	gttttagcat	gtaagcctcc	accttctttc	ccaacaaggt				420
tcctgtttac	agataaggag	actagangca	tctagtttta	aagatttttt	acagcagata				480
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<210> 272
 <211> 598
 <212> DNA
 <213> Chlamydia

<400> 272									
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ctctggctca	aactcggata	cctcaaaaac	agttccagtc	acagctaag	gcgggtgggt				120
ttatactgat	aagaatcttt	cgattactaa	catcacagga	attatcgaaa	ttgcaataaa				180
caaagcgaca	gatgttggag	gtggtgtcta	cgtaaaagga	acccttactt	gtaaaaacte				240
tcacccgtcta	caatttttga	aaaactcttc	cgataaaaca	ggtggaggaa	tctacggaga				300
agacaacatc	accctatcta	atttgacagg	gaagactcta	ttccaagaga	atactgcaca				360
aaaagagggc	ggtggactct	tcataaaagg	tacagataaa	gctcttcaaa	tgacaggact				420
ggatagtctc	tgtttaatta	ataacacatc	agaaaaacat	ggtggtgagg	gcctttgtta				480
ccaaagaaat	ctctcagact	tacacctctt	gatgtggaaa	caattccagg	aatcacgcct				540
gtacatgggt	aaacagtc	tactggccaat	aaatctacag	gaggtaatgg	tggagggc				598

<210> 273
 <211> 126
 <212> DNA
 <213> Chlamydia

<400> 273									
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gatagctttt	tattagccgt	ttttagcatc	ctaagagat	ctctcgtgtc	gtaacaaaata				120
cgagag									126

<210> 274
 <211> 264
 <212> DNA
 <213> Chlamydia

<400> 274									
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ataacccatg	ttacggggga	atctctttca	tggtttat	tagagctcat	caacctaggc				180
atagccctaa	aacatttctc	ttgaaagttc	accattcggt	ctccgataag	catcctcaaa				240
ttgctaaga	tatgtggatt	acgg							264

<210> 275
 <211> 359
 <212> DNA
 <213> Chlamydia

<400> 275	ggatccgaat	tccggcagcg	ataaaacctg	aaccacaaca	aagatctaaa	actttctgat	60
	tttcagctgc	aaattctttt	agataaatat	caaccatttc	ttcaggtttca	tatcttggaa	120
	ttaaaacttg	ttctcttaaa	ttaattctag	tatttaagta	ttcaacatag	cccattatta	180
	attgaaltgg	ataattttgc	cttaataatt	cacattcttt	ttcagtaatt	taggttcta	240
	aacgcgtaccg	ctttttttct	aaaattaatg	ttcttctatt	attcatttta	taagccactt	300
	tcctttattt	tttgattttg	ttcttctggt	agtaatgctt	caataatagt	taataattt	359

<210> 276
 <211> 357
 <212> DNA
 <213> Chlamydia

<400> 276	aaaacaattg	atataatttt	ttttttcata	acttccagac	tcctttctag	aaaagtcttt	60
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	tgatgaaaaa	ggaaacatcc	tttcgccaga	aacttttagca	ctattaaaga	atcggttacgg	180
	gttagataag	cttttattca	ccagtatctc	tatctatttg	aaatgtctgc	taaacactaga	240
	tttcggggaa	tctcttatct	acaagaatcg	aaatctcagc	attatgtctg	ccgctcttcc	300
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<210> 277
 <211> 505
 <212> DNA
 <213> Chlamydia

<400> 277	ggatccgaat	tccggcagcg	ctcgtgccga	ttgcttgctt	cagtcacccc	atcggtatag	60
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	ggtaaaaatc	ctaaggccat	accaggatgc	gacaggaaag	agatatctcc	attaggagct	180
	cggagacacg	ctgggttttg	gccacaagaa	tagtattcta	gttctcgtgt	tgcgtaatga	240
	taacaataaa	tgcatagtgt	tacaacaatc	ccagattcag	ctgtctgttg	atagaaagaga	300
	gcagctgttt	gttgaacggc	ttcttgaata	gaggagagct	cactcaaaaa	ggtagtgaac	360
	atgtttttca	ggaataagga	gtagcgcac	gcattgactc	ctttcccgga	agcatcagca	420
	acgattagaa	agagtttagc	ttggggacct	tcgcctataa	caaagatatc	aaagaaatct	480
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<210> 278
 <211> 407
 <212> DNA
 <213> Chlamydia

<400> 278	ggatccgaat	tccggcagcg	aactactgag	caaattgggt	atccaacttc	ctctttacga	60
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	ctttggctct	gctaactgga	gcggtgctgg	tatgattaaa	aactttgaag	acctattcat	180
	ccttcgccca	attacagaga	cacagcttca	ggcctttatg	gacgtctggt	ctcttctaga	240
	aacaaatagc	tcctatctgt	ccccagagag	cgtgcttaag	gccctactc	cttcaagtag	300
	acctactcaa	caagatacag	attctgatga	cgaacaaccg	agtaccagcc	agcaagctat	360
	ccgtatgaga	aaataggatt	agggaacaaa	aacgacagca	aaccaca		407

<210> 279
 <211> 351
 <212> DNA
 <213> Chlamydia

<400> 279
 ctgcgtgccgc ttacaggagg ctgtgatcct ttaaaataga gtttttctta tgacccccatg 60
 tggcgatagg ccgggtcttag cgcgatagt agaaatatcg gttgggtttt gtcccttgagg 120
 ggatcgatata ctttttcaaaa gtatggtccc cgtatcgatt atctggaggc tcttatgtct 180
 ttttttcata ctagaaaaata taagcttacc ctacaggagc tcttgtgttt acgagcgctg 240
 ttcttaatag acagctgttc ctctagtcca ggaatcaac ccgctgatga gacgatctat 300
 gtcttgctca tgaatcgcat gattttgtgat tctcgtgccg aattcggatc c 351

<210> 280
 <211> 522
 <212> DNA
 <213> Chlamydia

<400> 280
 ggatccgaat tcggcacgag cagaggaaaa aggcgatact cctcttgaag atcgtttcac 60
 agaagatctt tcggaagtct ctggagaaga ttttcgagga ttgaaaaatt cgttcgatga 120
 tgattcttct tctgcagaaa ttctcgatgc gtcacaaagt aaattttctg atocccacaat 180
 aaaggatctca gctcttgatt atctaattca aatagctccc tctgatggga aacttaagtc 240
 cgctctctatt caggcaaaagc atcaactgat gagccagaat cctcaggcca ttgttggaag 300
 acgcaatggt ctgttagctt cgaaaacctt tgccttcaga gcaaaatacat cctcttcaatc 360
 gcttcgctcc ttattattcc aagtaacctc atccccctct aattgcgcta atttacatca 420
 aatgcttgct tcttactcgc catcagagaa aaccgctggt atggagtttc tagtgaatgg 480
 catggttagca gatttaaaaat cggaggggccc ttcatttact cc 522

<210> 281
 <211> 577
 <212> DNA
 <213> Chlamydia

<400> 281
 ggatccgaat tcggcacgag atgcttctat tacaattggt ttggatgcgg aaaaagctta 60
 coagcttatt ctagaaaagt tgggagatca aattcttggt ggaattgctg atactattgt 120
 tgatagtaca gtccaagata ttttagacaa aatcacacaa gccctctc tcaggtttgtt 180
 gaaagctttt aacaactttc caataactaa taaaattcaa tgcaacgggt tattcaactcc 240
 caggacaatt gaaactttat taggaggaac tgaatatgga aaattcacag tcacacccaa 300
 aagctctggg agcatgttct tagtctcagc agatattatt gcatcaagaa ttggaaggcg 360
 cgttgttcta gcttttggtac gagaaggta ttctaagccc taacgcgatta gttatggata 420
 ctcatcaggc gttcctaatt tatgtagtct aagaaccaga attatttaata caggattgac 480
 tccgacaacg tattctattac gtgtaggcgg tttagaaagc ggtgtggtat ggggttaatgc 540
 cctttctaata ggcaatgata ttttaggaat aacaaat 577

<210> 282
 <211> 607
 <212> DNA
 <213> Chlamydia

<400> 282
 actmatcttc cccgggctcg agtgcggcgg caagcttctg gacggagctc gatacaaaaa 60
 tgtgtggctg tgaaacgcgtt ctcaaaaagc ttgtcttaaa agatattgtc tgcgttcogg 120
 attagttaaa tgtttaaaaa ttgctagaac aatatttatc ccaacccaagc tctctgcgg 180
 gctgaaaaaa cctaaattca aaagaatgac tgcgcgtcoa tcttcagaaa gacgatccga 240
 tctccataat tcgatgtctt tccccatggg gatctctgta gggagccagt tatttgcgca 300
 gccattcaaa taatgttccc aagccatttt gtaacttaata ggaacaagtt ggttgacatc 360
 gacgtgggtg cagttcaacta gacgcttgct atttagatta acgogtttct gttttccatc 420
 taaaaatctc gtttgcataa gaaccgttaa ttttattggt aatttatatg attataact 480
 gacatgcttc acaccctctc tccaaagaac agacaggtgc tttcttcgct ctctcaacaa 540
 taattcctgc cgaagcagac ttattcttca tccaacgagg ctgaattcct ctcttattaa 600
 tatctac 607

<210> 283
 <211> 1077

<212> DNA

<213> Chlamydia

<400> 283

ggatccgaat	tgcgcacgag	aagttaacga	tgacgatttg	ttccttttgt	agagaaggag	60
caatcgaaac	taaatgtgag	agagcatgtg	aagactccaa	tgccaggaata	atccccctcat	120
ttctagttaag	caggaaaaaa	gctcgtaacg	cctcttcac	gggtgctaat	gtataaaaagg	180
ctcgtctcga	ctcatgcatt	tcggcatgat	ctggcccaac	tgaaggataa	tctaataccag	240
cggaaatgga	gtgagtttgt	aatacttgtc	catctgcac	ttgaagaaga	tacgaataaa	300
atccgtggaa	tactccaggt	gcccctgttg	caaaacgtgc	tgcatgtttt	cctgaagaaa	360
tgcccagtc	tcccctctcc	actccaatta	attggacttt	tggtatccgg	ataaaatgat	420
ggaaaaatcc	aatagcgttg	gagccacctc	cgatacatgc	aatcagaata	tcaggatctc	480
ttcctgcaac	tgcatggatt	tgctctttca	cttcagcgct	tataacagac	tgaaaaaatc	540
gaacgatatc	gggataaggt	aaaggtccta	aggccgatcc	taagcaatag	tgagttaaat	600
agtggtgtgt	tgcccaatct	tgtagagctt	gattaactgc	atcttttgat	ccacaagatc	660
cttttgttac	agaaacgact	tcagcaccta	aaaagcgcat	ttctctaca	tttggtttct	720
gtcgttccac	atcttttgtc	cccattgata	ctacacaatc	taactctaga	taagcacacg	780
ctgttgcgtg	tgctactcca	tggtgtcccg	cacctgtttc	agctacaaca	cgtgttttcc	840
caagatattt	agcaagcaaa	cactgaccaa	gagcattatt	cagtttatgt	gtcctgtgat	900
gcaaaagatc	ttcgcgttta	agaaatactc	tagggccatc	aatagtctga	gcaaaattct	960
taacttcagt	cagaggagtt	tgtctccccc	catagttttt	caaaatacaa	tctagttcag	1020
ataaaaaact	ttgctgagtt	ttgagaaatc	cccatccgcg	tttttagattc	tgtatag	1077

<210> 284

<211> 407

<212> DNA

<213> Chlamydia

<400> 284

ggatccgaat	tgcgcacgag	aactactgag	caaatgggtg	atccaaactc	ctctttacga	60
aagaaaaaca	gaaggcattc	tccataccaa	gatttgtgtg	atcgacaata	aaactccaat	120
ctttggctct	gctaactgga	gcgggtgctg	tatgattaaa	aaactttgaag	acctattacc	180
cottccgcca	attacagaga	cacagcttca	ggcctttatg	gacgtctgtg	ctctctcaga	240
aacaaatagc	tcctatctgt	ccccagagag	cgtgcttaag	gcccctactc	cttcaagtag	300
acctactcaa	caagatgacg	attctgatga	cgaaacaacc	agtaaccagc	agcaagctat	360
ccgatgatga	aaataggatt	agggaacaaa	aacgacagca	aaccaca		407

<210> 285

<211> 802

<212> DNA

<213> Chlamydia

<400> 285

ggatccgaat	tgcgcacgag	ttagottaat	gtctttgtca	tctctaccta	catttgcagc	60
taattctaca	ggcacaattg	gaatcgttaa	tttactgtgc	tgccatagaag	agtcgtgctt	120
tgggaaaaaa	gaatctgtgt	aatctgaaaa	gatgaaaac	caattctcta	acagcatggg	180
gaagatggag	gaagaactgt	cttctatcta	ttccaaagtc	caagacgacg	attacatgga	240
aggtctatcc	gagacgcgag	ctgcgcgaat	aagaaaaaaa	ttcgagaatc	tatctcgaga	300
atacacacga	gctcaaggcg	agtattacaa	aatatttaac	caaatgttat	tcaagcgcat	360
gcaaaagatt	atggaagaag	tgaaaaaagc	ttctgaaact	gtgcgttatc	aagaaggctt	420
gtcagctctt	cttaacgaag	atattgtctt	atctatcgat	agttcggcag	ataaaaaccga	480
tgctgttatt	aaagtctctg	atgattcttt	tcaaaataat	taacatcgca	agctagccga	540
ggagtgcggt	atgtctcaat	ccacttatct	tcttgaaaca	tattctgatt	ttttgaaagt	600
cgagtttcaa	gaaatggag	ctactctctt	ttcggagatt	gaagagatcg	aggaagcaaa	660
aacggcacac	atcacattct	tagataatga	aaaatatgct	aaacatttaa	aatcatcgga	720
agctggcgct	atcatcatat	ctcgaacaca	gtttcaaaaa	tatcgagact	tgaataaaaa	780
ctttcttate	acttctgagt	ct				802

<210> 286

<211> 588

<212> DNA

<213> Chlamydia

<400> 286

ggatccgaat	tcggcacgag	gcaatattta	ctcccaacat	tacggttcca	aataagcgat	60
aaggtcttct	aataaggaag	ttaatgtaag	agggtttttt	attgcttttc	gtaaggtagt	120
attgcaaccg	cacgcgattg	aatgatacgc	aagccatttc	catcatggaa	aagaaccctt	180
ggacaaaaat	acaagaggag	ttcaactccta	accgaaaaaa	gggagagtta	gtttccatgg	240
gttttctcta	tatacacccg	tttcacacaa	ttaggagccg	cgctcagtat	ttggaaataca	300
aattgtcccc	aagcgaaatt	tgttctctgt	tcagggtatt	ctcctaattg	ttctgtcaag	360
catccgccta	tggttaacgc	attagctgta	gtaggaagat	caactccaaa	caggtcatag	420
aaatcagaaa	gctcataggt	gctcgacga	ataacaacat	tcttgtctga	gtgagcgat	480
tggttaaaag	atgggcgatt	atgagctacc	tcatacagaga	ctatttttaa	tagatcattt	540
tggttaataca	atctctctat	agaccocat	tcatacaatga	taatctcg		588

<210> 287

<211> 489

<212> DNA

<213> Chlamydia

<220>

<221> misc_feature

<222> 488

<223> n = A,T,C or G

<400> 287

agtgcctatt	gttttgcagg	ctttgtctga	tgatagcgat	acogtaactg	agattgctgt	60
acaagtagct	gttatgtatg	gttctagtgt	cttactgcgc	gcogtgggag	atttagcgaa	120
aaatgattct	tctatcoaa	tacgcatac	tgcttatcgt	gctgcagccg	tgttggagat	180
acaagatctt	gtgcctcatt	tacgagttgt	agtcocaaat	acacaaatag	atgggaacgga	240
aagaagagaa	gcttggagat	ctttatgtgt	tcttactcgg	cctcatagtg	gtgtattaac	300
tgccatagat	caagcttttaa	tgacctgtga	gatgttaaa	gaatatccgt	aaaagtgtac	360
ggaagaacag	attcgtacat	tattggctgc	agatcatcca	gaagtgcagg	tagctacttt	420
acagatcatt	ctgagaggag	gtagagtatt	cgggtcatct	tctataatgg	aatcggttct	480
cgtgcognt						489

<210> 288

<211> 191

<212> DNA

<213> Chlamydia

<400> 288

ggatccgaat	tcaggatatg	ctgttggtgt	atcaataaaa	agggttttgc	catttttttaa	60
gacgactttg	tagataaacg	taggagctgt	agcaataata	tcgagatcaa	attctctaga	120
gattctctca	aagatgattt	ctaagtgcag	cagtcctaaa	aatccacagc	ggaaccocaa	180
tccgagagag	t					191

<210> 289

<211> 515

<212> DNA

<213> Chlamydia

<400> 289

ggatccgaat	tcgggcacgag	gagcgacgtg	aaatagtgg	atcttcccg	attcttatta	60
cttctgcgtt	gccttaacga	aatggtcctt	tgcattttgg	acataattacc	ggtgcttatt	120
tgctgcgaga	tgttttatgc	cgttttcaga	gactacaagg	caaagagggt	ttgtatatatt	180
gtgggtctga	tgaatacgg	atcgcaatta	cccttaatgc	agagttggca	ggcatgggg	240
atcaagaata	tgtgcacatg	tatcataagc	ttcataaaga	tacottcaag	aaattgggaa	300
tttctgtaga	tttcttttcc	agaactacga	acgcttatca	tctctctatt	gtgcaagatt	360
tctatcgaaa	cttgacaggaa	cgcggaactg	tagagaatca	ggtgaccgaa	cagctgtatt	420
ctgagaagga	aggggaagtt	tttagcgacc	gttatgttgt	agggtacttg	cccaagtggt	480
ggtttgatcg	agctcgagga	gatgagtgtc	agcag			515

<210> 290
 <211> 522
 <212> DNA
 <213> Chlamydia

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<400> 290
ggatccgaat tcggcacgag ggaggaatgg aagggccctc cgaattktama tctgctacca      60
tgccattccac tagaaactcc ataacagcgg tttctcttga tggcgagtaa gaagcaagca      120
tttgatgttaa attagcgcaa tttagagggg atgaggttac ttggaatat aaggagcgaa      180
gcgatgaagg agatgtattt gctctggaag caaagggttc tgaagctaac agaacattgc      240
gtcctccaac aatcgctctga ggattctggc tcatcagttg atgctttggc tgaatgagag      300
cggaacttaag ttcccatcga gaggggagcta tttgaattag ataatcaaga gctagatcct      360
ttattgtggg atcagaaaaat ttacttgtga ggcgatcgag aatttcgtca gaagaagaat      420
ctcatcgcga cgaatttttc aatcctcgaa aatcctctcc agagacttcg gaaagactct      480
ctgtgaaacg atcttcaaga ggagtatcgc ctttttcycy tg

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<210> 291
 <211> 1002
 <212> DNA
 <213> Chlamydia

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<400> 291
atggcgacta acgcgaattag atcggcagga agtcgagcaa gtaagatgct gctgccagtt      60
gccaaagaac cagcggctgt cagctccttt gctcagaaag gactttattg tattcaacaa      120
ttttttacaa accctgggaa taagttagca aagtttgtag gggcaacaaa aagtttagat      180
aaatgcttta agctaagtaa ggcggtttct gactgtgtcg taggatcgct ggaagaggcg      240
ggatgcacag gggacgcatt gacctccgag agaaaacgcc aggggtatgtt aaaaacaact      300
cgagaagttg ttgccttagc taatgtgtctc aatggagctg ttccatctat cgttaaactgc      360
actcagaggt gttaccaata cacacgtcaa gctctcagtg taggaagcaa gacaaaagaa      420
agaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca      480
gcttcacagg aagcttgtac ggcagtcggt gcaacgactt actcagcgac attcggtgtt      540
ttacgtccgt taatgttaat caataaaact acagcaaaac cattcttga caaagcgact      600
gtaggcaatt ttggcacggc tgttgtcgga attatgacca ttaatcatat ggcaggagtt      660
gctgtgctgt ttggcggaat cgcattagaa caaaagctgt tcaaacgtgc gaaggaaatc      720
ctatacaatg agagatgtgc cttagaaaaa caacaatctc agttgagtg ggacgtgatt      780
ctaagcgcgg aaagggcatt acgtaaaaga ccagttgtca ctctaaaaaa aaatgtttta      840
actctctctg aaaaagcttt agagttggta ctggatggag tcaaaactcat tctcttaccg      900
attacatgtg cttgctccgc tgcattttct ggagccttga cggcagcatc cgcaggaatt      960
ggcttatata gcatatggca gaaaacaaaag tctggcaaat aa

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<210> 292
 <211> 333
 <212> PRT
 <213> Chlamydia

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<400> 292
Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met
1      5      10      15
Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln
20      25      30
Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys
35      40      45
Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys
50      55      60
Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala
65      70      75      80
Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met
85      90      95
Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly
100      105      110

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Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr
 115 120 125
 Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro
 130 135 140
 Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala
 145 150 155 160
 Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser Ala
 165 170 175
 Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr Ala
 180 185 190
 Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala Val
 195 200 205
 Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala Val
 210 215 220
 Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu Ser
 225 230 235 240
 Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu Ser
 245 250 255
 Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His Val
 260 265 270
 Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu Glu
 275 280 285
 Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val Ala
 290 295 300
 Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly Ile
 305 310 315 320
 Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys
 325 330

<210> 293

<211> 7

<212> DNA

<213> Chlamydia

<400> 293

tgcaatc

<210> 294

<211> 196

<212> PRT

<213> Chlamydia

<400> 294

Thr Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys
 5 10 15

Ala Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg
 20 25 30

Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val
 35 40 45

Cys Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu
 50 55 60

Glu His Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr
 65 70 75 80

His Ser Arg Trp Leu Thr Val Ala Arg Asp Ala Gly Gly Ile Glu Gly
 85 90 95

Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala
 100 105 110
 Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe
 115 120 125
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu
 145 150 155 160
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser
 165 170 175
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe
 180 185 190
 Gln Thr Met Asp
 195
 <210> 295
 <211> 181
 <212> PRT
 <213> Chlamydia
 <400> 295
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu
 5 10 15
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser
 20 25 30
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile
 35 40 45
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys
 50 55 60
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile
 65 70 75 80
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser
 85 90 95
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu
 100 105 110
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile
 115 120 125
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu
 130 135 140
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys
 145 150 155 160
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr
 165 170 175

Thr Arg Trp Leu Asp
180

<210> 296
<211> 124
<212> PRT
<213> Chlamydia

<400> 296
Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala
5 10 15
Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu
20 25 30
Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro
35 40 45
Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly
50 55 60
Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr
65 70 75 80
Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu
85 90 95
Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn
100 105 110
Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu
115 120

<210> 297
<211> 488
<212> PRT
<213> Chlamydia

<400> 297
Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly
5 10 15
Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu
20 25 30
Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu
35 40 45
Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu
50 55 60
Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp
65 70 75 80
Asp Leu Val Gln Ser Ser Val Ser Ala Gln Gln Lys Leu Arg Thr Gln
85 90 95
Glu Asn Pro Ser Thr Ser Phe Cys Gln Gln Val Leu Ala Asp Phe Ile
100 105 110

Gly Gly Leu Asn Asp Phe His Ala Gly Val Thr Phe Phe Ala Ile Glu
 115 120 125
 Ser Ala Tyr Leu Pro Tyr Thr Val Gln Lys Ser Ser Asp Gly Arg Phe
 130 135 140
 Tyr Phe Val Asp Ile Met Thr Phe Ser Ser Glu Ile Arg Val Gly Asp
 145 150 155 160
 Glu Leu Leu Glu Val Asp Gly Ala Pro Val Gln Asp Val Leu Ala Thr
 165 170 175
 Leu Tyr Gly Ser Asn His Lys Gly Thr Ala Ala Glu Glu Ser Ala Ala
 180 185 190
 Leu Arg Thr Leu Phe Ser Arg Met Ala Ser Leu Gly His Lys Val Pro
 195 200 205
 Ser Gly Arg Thr Thr Leu Lys Ile Arg Arg Pro Phe Gly Thr Thr Arg
 210 215 220
 Glu Val Arg Val Lys Trp Arg Tyr Val Pro Glu Gly Val Gly Asp Leu
 225 230 235 240
 Ala Thr Ile Ala Pro Ser Ile Arg Ala Pro Gln Leu Gln Lys Ser Met
 245 250 255
 Arg Ser Phe Phe Pro Lys Lys Asp Asp Ala Phe His Arg Ser Ser Ser
 260 265 270
 Leu Phe Tyr Ser Pro Met Val Pro His Phe Trp Ala Glu Leu Arg Asn
 275 280 285
 His Tyr Ala Thr Ser Gly Leu Lys Ser Gly Tyr Asn Ile Gly Ser Thr
 290 295 300
 Asp Gly Phe Leu Pro Val Ile Gly Pro Val Ile Trp Glu Ser Glu Gly
 305 310 315 320
 Leu Phe Arg Ala Tyr Ile Ser Ser Val Thr Asp Gly Asp Gly Lys Ser
 325 330 335
 His Lys Val Gly Phe Leu Arg Ile Pro Thr Tyr Ser Trp Gln Asp Met
 340 345 350
 Glu Asp Phe Asp Pro Ser Gly Pro Pro Pro Trp Glu Glu Phe Ala Lys
 355 360 365
 Ile Ile Gln Val Phe Ser Ser Asn Thr Glu Ala Leu Ile Ile Asp Gln
 370 375 380
 Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu Leu Ser
 385 390 395 400
 Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met Ile Leu
 405 410 415
 Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu Leu Glu
 420 425 430

Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp Asn Met
 435 440 445

Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys Ser Phe
 450 455 460

Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu Leu Ser
 465 470 475 480

Thr Pro Ile Pro Leu Phe Gly Phe
 485

<210> 298
 <211> 140
 <212> PRT
 <213> Chlamydia

<400> 298
 Arg Ile Asp Ile Ser Ser Val Thr Phe Phe Ile Gly Ile Leu Leu Ala
 5 10 15

Val Asn Ala Leu Thr Tyr Ser His Val Leu Arg Asp Leu Ser Val Ser
 20 25 30

Met Asp Ala Leu Phe Ser Arg Asn Thr Leu Ala Val Leu Leu Gly Leu
 35 40 45

Val Ser Ser Val Leu Asp Asn Val Pro Leu Val Ala Ala Thr Ile Gly
 50 55 60

Met Tyr Asp Leu Pro Met Asn Asp Pro Leu Trp Lys Leu Ile Ala Tyr
 65 70 75 80

Thr Ala Gly Thr Gly Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly
 85 90 95

Val Ala Tyr Met Gly Met Glu Lys Val Ser Phe Gly Trp Tyr Val Lys
 100 105 110

His Ala Ser Trp Ile Ala Leu Ala Ser Tyr Phe Gly Gly Leu Ala Val
 115 120 125

Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val
 130 135 140

<210> 299
 <211> 361
 <212> PRT
 <213> Chlamydia

<400> 299
 His Gln Glu Ile Ala Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln
 5 10 15

Ile Asn Gln Ala Gln Gln Asp Ile Gln Thr Ile Thr Pro Ser Gly Leu
 20 25 30

Asp Ile Pro Ile Val Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser
 35 40 45

Ala Ala Gly Ala Leu Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu
 50 55 60
 Leu Leu Asp Asp Val Asp Asn Glu Met Ala Ala Ile Ala Met Gln Gly
 65 70 75 80
 Phe Arg Ser Met Ile Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala
 85 90 95
 Lys Glu Leu Gln Ala Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln
 100 105 110
 Leu Val Gly Ala Asp Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys
 115 120 125
 Asp Ala Leu Ala Gln Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala
 130 135 140
 Thr Ala Met Gly Gln Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly
 145 150 155 160
 Ser Ala Gly Thr Ala Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr
 165 170 175
 Lys Thr Ala Phe Ser Ser Thr Ser Ser Ser Tyr Ala Ala Ala Leu
 180 185 190
 Ser Asp Gly Tyr Ser Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu
 195 200 205
 Ser Arg Ser Gly Val Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala
 210 215 220
 Leu Ser Arg Ser Val Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser
 225 230 235 240
 Ala Asp Ala Ser Gln Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln
 245 250 255
 Thr Leu Gly Asp Val Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met
 260 265 270
 Ser Thr Ile Val Ser Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln
 275 280 285
 Lys Leu Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala
 290 295 300
 Val Gln Asn Ser Val Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu
 305 310 315 320
 Arg Glu Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn
 325 330 335
 Ala Phe Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile
 340 345 350
 Ala Ser Leu Phe Ser Gly Tyr Leu Ser
 355 360

<210> 300
 <211> 207
 <212> PRT
 <213> Chlamydia

<400> 300
 Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val Ala Asp Ala Arg
 5 10 15
 Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp Ala Tyr Leu Phe
 20 25 30
 Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu Gly Ile Leu Ile
 35 40 45
 Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln Pro Phe Val Leu
 50 55 60
 Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile Gly Glu Trp Leu
 65 70 75 80
 Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile Ile Thr Asp Ser
 85 90 95
 His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile Gly Leu Cys Trp
 100 105 110
 Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser Leu Asp Cys Phe
 115 120 125
 Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val Asp Ala Leu Ala
 130 135 140
 Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu Gln Thr Pro Leu
 145 150 155 160
 Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His Ser Tyr Pro Thr
 165 170 175
 Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu
 180 185 190
 Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys
 195 200 205

<210> 301
 <211> 183
 <212> PRT
 <213> Chlamydia

<400> 301
 Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp
 5 10 15
 Ile Asp Ala Asn Gly Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser
 20 25 30
 Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu
 35 40 45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu
 50 55 60
 Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly
 65 70 75 80
 Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile
 85 90 95
 Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg
 100 105 110
 Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser
 115 120 125
 Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala
 130 135 140
 Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly
 145 150 155 160
 Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg
 165 170 175
 Pro Pro Ala Gly Gly Ser Ala
 180

<210> 302

<211> 232

<212> PRT

<213> Chlamydia

<400> 302

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp
 5 10 15
 Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu
 35 40 45
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
 50 55 60
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala
 65 70 75 80
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr
 130 135 140

Val Thr Thr Asp Val Val Lys Thr Ile Ala Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala
 165 170 175
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
 180 185 190
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
 210 215 220
 Asp Thr Arg Glu Leu Ile Ala Leu
 225 230

<210> 303
 <211> 238
 <212> PRT
 <213> chlamydia

<400> 303
 Ile Asn Ser Lys Leu Glu Thr Lys Asn Leu Ile Tyr Leu Lys Leu Lys
 5 10 15
 Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn
 20 25 30
 Thr Gln Asn Cys Val Phe Ala Asp Asn Ile Lys Val Gly Gln Met Thr
 35 40 45
 Glu Pro Leu Lys Asp Gln Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro
 50 55 60
 Val Ala Ala Lys Met Thr Ala Ser Asp Gly Ile Ser Leu Thr Val Ser
 65 70 75 80
 Asn Asn Pro Ser Thr Asn Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu
 85 90 95
 Lys Ala Tyr Gln Leu Ile Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly
 100 105 110
 Gly Ile Ala Asp Thr Ile Val Asp Ser Thr Val Gln Asp Ile Leu Asp
 115 120 125
 Lys Ile Thr Thr Asp Pro Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn
 130 135 140
 Phe Pro Ile Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg
 145 150 155 160
 Asn Ile Glu Thr Leu Leu Gly Gly Thr Glu Ile Gly Lys Phe Thr Val
 165 170 175
 Thr Pro Lys Ser Ser Gly Ser Met Phe Leu Val Ser Ala Asp Ile Ile
 180 185 190

Ala Ser Arg Met Glu Gly Gly Val Val Leu Ala Leu Val Arg Glu Gly
195 200 205

Asp Ser Lys Pro Tyr Ala Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro
210 215 220

Asn Leu Cys Ser Leu Arg Thr Arg Ile Ile Asn Thr Gly Leu
225 230 235

<210> 304

<211> 133

<212> PRT

<213> Chlamydia

<400> 304

His Met His His His His His Met Ala Ser Ile Cys Gly Arg Leu
5 10 15

Gly Ser Gly Thr Gly Asn Ala Leu Lys Ala Phe Phe Thr Gln Pro Ser
20 25 30

Asn Lys Met Ala Arg Val Val Asn Lys Thr Lys Gly Met Asp Lys Thr
35 40 45

Val Lys Val Ala Lys Ser Ala Ala Glu Leu Thr Ala Asn Ile Leu Glu
50 55 60

Gln Ala Gly Gly Ala Gly Ser Ser Ala His Ile Thr Ala Ser Gln Val
65 70 75 80

Ser Lys Gly Leu Gly Asp Thr Arg Thr Val Val Ala Leu Gly Asn Ala
85 90 95

Phe Asn Gly Ala Leu Pro Gly Thr Val Gln Ser Ala Gln Ser Phe Phe
100 105 110

Ser His Met Lys Ala Ala Ser Gln Lys Thr Gln Glu Gly Asp Glu Gly
115 120 125

Leu Thr Ala Asp Leu
130

<210> 305

<211> 125

<212> PRT

<213> Chlamydia

<400> 305

Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
5 10 15

Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
20 25 30

Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
35 40 45

Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50 55 60

Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80

Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95

Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110

Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu
 115 120 125

<210> 306

<211> 38

<212> DNA

<213> Chlamydia trachomatis

<400> 306

gagagcgccc gctcatgttt ataacaaagg aacttatg

38

<210> 307

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 307

gagagcgccc gcttacttag gtgagaagaa gggagtttc

39

<210> 308

<211> 1860

<212> DNA

<213> Chlamydia trachomatis

<400> 308

atgcataccc	atcaccatca	cacggccgog	tccgataact	tccagctgtc	ccagggtggg	60
cagggtattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgtttcata	tcggggcctac	cgcccttctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtagcgtc	atctcgggtg	cctggcaaac	caagtccggc	360
ggcacgcgta	cagggaacgt	gacattggcc	gagggaaccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcgccgcgt	catgtttata	acaaaggaac	ttatgaatcg	agttatagaa	480
atccatgctc	actacgatca	aagacaaact	tctcaatctc	caaatacaaa	cttcttagta	540
catcatcctt	atcttactct	tattcccaag	tttctactag	gagctctaatt	cgtctatgct	600
ccttattcgt	ttgcagaaat	ggaattagct	atttctggag	ataaacaagg	taaagatcga	660
gataaccctta	ccatgalctc	ttcctgtcct	gaaggcaact	attacatcat	caatcgcaaa	720
ctcactactca	gtgatttctc	gttactaaat	aaagtttcat	cagggggagc	ctttcgggat	780
ctagcaggga	aaatttccct	cttaggaaaa	aattcttctg	cgtccattca	tttttaaacac	840
attaatatca	atgggttttg	agccggagtc	ttttctgaat	cctctattga	atttatgatg	900
ttacgaaaaac	ttgttgcctt	tggatctgaa	agcacaggag	gaatttttac	tgcgaaaagag	960
gacatctctt	ttaaaaacaa	ccaccacatt	gccttcgcga	ataatatcac	caaagggaat	1020
ggtggcggtta	tccagctcca	aggagatatg	aaaggaagcg	tatcctttgt	agatcaacgt	1080
ggagctatca	tctttaccaa	taaccaagct	gtaacttctt	catcgaatga	acatagtggg	1140
cgtggaggag	caattagcgg	tgacttcgca	ggatccagaa	ttctttttct	taataaccaa	1200
caaattacttt	tcgaaggcaa	tagcgtctgt	catggagggtg	ctatctacaa	taagaatggc	1260
cttctcgagt	tcttaggaaa	tcaggagacc	cttgccttta	aagagaacac	aacaatagct	1320
aacgggggag	ctatatcac	aagtaatttc	aaagcgaatc	aacaacatc	ccccattcta	1380
ttctctcaaa	atcatcgcaa	taagaaaggc	ggagcgattt	aogcgcaata	tgtgaacctta	1440

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gaacagaatc aagatactat tcgctttgaa aaaaataaccg ctaaagaagg cggtaggagcc 1500
atcacctctt ctcaatgctc aattactgct cataatacca tcactttttc cgataatgct 1560
gcgggagatc ttggaggagg agcaattctt ctagaaggga aaaaaccttc tctaaccctg 1620
attgctcata gtggtaatat tgcatttagc ggcaatacca tgcttcatat caccaaaaaa 1680
gcttccttag atcgacacaa ttctatctta atcaagaag ctcctataa aatccaactt 1740
gcagcgaaaca aaacaccattc tattcatttc ttgatcctg tcatggcatt gtcagcatca 1800
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<210> 309

<211> 619

<212> PRT

<213> Chlamydia trachomatis

<400> 309

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20 25 30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35 40 45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50 55 60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65 70 75 80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85 90 95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100 105 110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115 120 125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130 135 140
Arg Pro Leu Met Phe Ile Thr Lys Glu Leu Met Asn Arg Val Ile Glu
145 150 155 160
Ile His Ala His Tyr Asp Gln Arg Gln Leu Ser Gln Ser Pro Asn Thr
165 170 175
Asn Phe Leu Val His His Pro Tyr Leu Thr Leu Ile Pro Lys Phe Leu
180 185 190
Leu Gly Ala Leu Ile Val Tyr Ala Pro Tyr Ser Phe Ala Glu Met Glu
195 200 205
Leu Ala Ile Ser Gly His Lys Gln Gly Lys Asp Arg Asp Thr Phe Thr
210 215 220
Met Ile Ser Ser Cys Pro Glu Gly Thr Asn Tyr Ile Ile Asn Arg Lys
225 230 235 240
Leu Ile Leu Ser Asp Phe Ser Leu Leu Asn Lys Val Ser Ser Gly Gly
245 250 255
Ala Phe Arg Asn Leu Ala Gly Lys Ile Ser Phe Leu Gly Lys Asn Ser
260 265 270
Ser Ala Ser Ile His Phe Lys His Ile Asn Ile Asn Gly Phe Gly Ala
275 280 285
Gly Val Phe Ser Glu Ser Ser Ile Glu Phe Thr Asp Leu Arg Lys Leu
290 295 300
Val Ala Phe Gly Ser Glu Ser Thr Gly Gly Ile Phe Thr Ala Lys Glu
305 310 315 320
Asp Ile Ser Phe Lys Asn Asn His His Ile Ala Phe Arg Asn Asn Ile
325 330 335
Thr Lys Gly Asn Gly Gly Val Ile Gln Leu Gln Gly Asp Met Lys Gly
340 345 350
Ser Val Ser Phe Val Asp Gln Arg Gly Ala Ile Ile Phe Thr Asn Asn
355 360 365
Gln Ala Val Thr Ser Ser Ser Met Lys His Ser Gly Arg Gly Gly Ala

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370          375          380
Ile Ser Gly Asp Phe Ala Gly Ser Arg Ile Leu Phe Leu Asn Asn Gln
385          390          395          400
Gln Ile Thr Phe Glu Gly Asn Ser Ala Val His Gly Gly Ala Ile Tyr
          405          410          415
Asn Lys Asn Gly Leu Val Glu Phe Leu Gly Asn Ala Gly Pro Leu Ala
          420          425          430
Phe Lys Glu Asn Thr Thr Ile Ala Asn Gly Gly Ala Ile Tyr Thr Ser
          435          440          445
Asn Phe Lys Ala Asn Gln Gln Thr Ser Pro Ile Leu Phe Ser Gln Asn
          450          455          460
His Ala Asn Lys Lys Gly Gly Ala Ile Tyr Ala Gln Tyr Val Asn Leu
          465          470          475
Glu Gln Asn Gln Asp Thr Ile Arg Phe Glu Lys Asn Thr Ala Lys Glu
          485          490          495
Gly Gly Gly Ala Ile Thr Ser Ser Gln Cys Ser Ile Thr Ala His Asn
          500          505          510
Thr Ile Thr Phe Ser Asp Asn Ala Ala Gly Asp Leu Gly Gly Gly Ala
          515          520          525
Ile Leu Leu Glu Gly Lys Lys Pro Ser Leu Thr Leu Ile Ala His Ser
          530          535          540
Gly Asn Ile Ala Phe Ser Gly Asn Thr Met Leu His Ile Thr Lys Lys
          545          550          555
Ala Ser Leu Asp Arg His Asn Ser Ile Leu Ile Lys Glu Ala Pro Tyr
          565          570          575
Lys Ile Gln Leu Ala Ala Asn Lys Asn His Ser Ile His Phe Phe Asp
          580          585          590
Pro Val Met Ala Leu Ser Ala Ser Ser Pro Ile Gln Ile Asn Ala
          595          600          605
Pro Glu Tyr Glu Thr Pro Phe Phe Ser Pro Lys
          610          615

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<210> 310

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 310

gagagcggcc gctccattct attcatttct ttgatcctg

39

<210> 311

<211> 33

<212> DNA

<213> Chlamydia trachomatis

<400> 311

gagagcggcc gcttagaagc caacatagcc tcc

33

<210> 312

<211> 2076

<212> DNA

<213> Chlamydia trachomatis

<400> 312

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atgcatacc atcaccatca cagcgccggc tccgataact tccagctgtc ccagggtggg 60
caggattccg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
accgtcatca tcgggcctac cgcttctctc ggcttgggtg ttgtcgacaa caacggcaac 180
ggcgacagag tccaacgcgt ggctcgggagc gctccggcgg caagtctcgg catctccacc 240
ggcgactgta tcaccgcggt cgacggcgct cggatcaact cggccacggc gatggcgagg 300
ggcgttaacg ggcatactcc cggtagcgtc atctcgggtg cctggcaaac caagtccggc 360
ggcacgcgta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420

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ccatcacact	ggcggcgct	ccattctatt	catttctttg	atcctgtcat	ggcattgtca	480
gcacatcttt	ccctctata	aatcaatgct	cctgagtagt	aaactccctt	cttctcacct	540
aagggataga	tcgttttttc	gggtgcgaat	cttttagatg	atgctaggga	agatgttgca	600
aatgaacat	cgatttttaa	ccaacccgtt	catctatata	atggcacctt	atctatcgaa	660
aatggagccc	atctgattgt	ccaaagcttc	aaacagaccg	gaggacgtat	cagtttatct	720
ccaggatcct	ccttggtctt	atacacgatg	aactcgttct	tccatggcaa	catatccagc	780
aaagaaccoc	tagaaaattaa	tggtttaagc	tttggagtag	atatctctcc	ttctaatctt	840
caagcagaga	tcctgtcccg	caacgcctct	ttacgattat	ccggatccoc	atctatccat	900
gatcctgaag	gattatttcta	cgaaaatcgc	gatactgcag	catcaccata	ccaatggaa	960
atcttctcta	cctctgataa	aactgttagat	atctccaaat	ttactactga	ttctctagtt	1020
acgaacaaac	aatcaggattt	ccaaggagcc	tggcatttta	gctggcagcc	aaatactata	1080
aacaatacta	aacaaaaaat	altaagagctt	tcttggctcc	caacaggaga	atatgtcctt	1140
gaatccaatc	gagtgggcg	tgccgttctt	aattccttat	ggagcacatt	tttactttta	1200
cagacagcct	ctcataaact	aggcgatcat	ctatgtaata	atogattctt	tattctactt	1260
tcatacttcg	gagttttta	tggaggaaat	ggagcagaaa	tgtctaccca	ctcctcagaa	1320
gaagaaagct	ttatatctcg	tttaggagct	acaggaacct	ctatcatatc	cttaactccc	1380
tccctgacac	tctctggagg	aggctcacat	atgttcggag	attcgttctg	tgcagactta	1440
ccagaacaca	tcactctaga	aggaattgtt	cagaatgtcg	gtttaaccca	tgctctggga	1500
ccccttactg	tcaattctac	attatgtgca	gccttagatc	acaacgcgat	ggcccgata	1560
tgctccaaaa	aagatcacac	ctatgggaaa	tggtatatac	tcggtatgag	aggaacatta	1620
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atcgaagcca	caaatattct	gcaaaagagct	tttactgaaa	gaggtctata	ccaagaagt	1740
tttccaaga	caaaaactct	aaacatcgcc	atccccatag	ggatttggtta	tgaattctgc	1800
ttagggaata	gctcttttgc	tctactaggt	aagggatcca	tcggttactc	tcgagatatt	1860
aaacagagaa	accctaccac	tcttgctcac	ctggctatga	atgattttgc	ttggactacc	1920
aatggctgtt	cagttccaac	ctccgcacac	acattggcaa	atcaattgat	tcttcgtcat	1980
aaagcatggt	ccttatcat	cacggcatat	actatcaacc	gtgaaggga	gaacctctcc	2040
aatagcttat	cctgcggagg	ctatgttgcc	ttctaa			2076

<210> 313

<211> 691

<212> PRT

<213> Chlamydia trachomatis

<400> 313

Met	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1				5				10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
			20					25				30		Ala
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
			35				40					45		Ala
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg
			50				55				60			Val
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser
			65			70				75			80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala
			85					90					95	Thr
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile
			100					105					110	Ser
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val
			115				120					125		Thr
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His
			130				135				140			Trp
Arg	Pro	Leu	His	Ser	Ile	His	Phe	Phe	Asp	Pro	Val	Met	Ala	Leu
			145			150				155				Ser
Ala	Ser	Ser	Ser	Pro	Ile	Gln	Ile	Asn	Ala	Pro	Glu	Tyr	Glu	Thr
				165				170					175	Pro
Phe	Phe	Ser	Pro	Lys	Gly	Met	Ile	Val	Phe	Ser	Gly	Ala	Asn	Leu
			180					185					190	Leu
Asp	Asp	Ala	Arg	Glu	Asp	Val	Ala	Asn	Arg	Thr	Ser	Ile	Phe	Asn
			195				200					205		Gln

Pro Val His Leu Tyr Asn Gly Thr Leu Ser Ile Glu Asn Gly Ala His
 210 215 220
 Leu Ile Val Gln Ser Phe Lys Gln Thr Gly Gly Arg Ile Ser Leu Ser
 225 230 235 240
 Pro Gly Ser Ser Leu Ala Leu Tyr Thr Met Asn Ser Phe Phe His Gly
 245 250 255
 Asn Ile Ser Ser Lys Glu Pro Leu Glu Ile Asn Gly Leu Ser Phe Gly
 260 265 270
 Val Asp Ile Ser Pro Ser Asn Leu Gln Ala Glu Ile Arg Ala Gly Asn
 275 280 285
 Ala Pro Leu Arg Leu Ser Gly Ser Pro Ser Ile His Asp Pro Glu Gly
 290 295 300
 Leu Phe Tyr Glu Asn Arg Asp Thr Ala Ala Ser Pro Tyr Gln Met Glu
 305 310 315 320
 Ile Leu Leu Thr Ser Asp Lys Thr Val Asp Ile Ser Lys Phe Thr Thr
 325 330 335
 Asp Ser Leu Val Thr Asn Lys Gln Ser Gly Phe Gln Gly Ala Trp His
 340 345 350
 Phe Ser Trp Gln Pro Asn Thr Ile Asn Asn Thr Lys Gln Lys Ile Leu
 355 360 365
 Arg Ala Ser Trp Leu Pro Thr Gly Glu Tyr Val Leu Glu Ser Asn Arg
 370 375 380
 Val Gly Arg Ala Val Pro Asn Ser Leu Trp Ser Thr Phe Leu Leu Leu
 385 390 395 400
 Gln Thr Ala Ser His Asn Leu Gly Asp His Leu Cys Asn Asn Arg Ser
 405 410 415
 Leu Ile Pro Thr Ser Tyr Phe Gly Val Leu Ile Gly Gly Thr Gly Ala
 420 425 430
 Glu Met Ser Thr His Ser Ser Glu Glu Glu Ser Phe Ile Ser Arg Leu
 435 440 445
 Gly Ala Thr Gly Thr Ser Ile Ile Arg Leu Thr Pro Ser Leu Thr Leu
 450 455 460
 Ser Gly Gly Gly Ser His Met Phe Gly Asp Ser Phe Val Ala Asp Leu
 465 470 475 480
 Pro Glu His Ile Thr Ser Glu Gly Ile Val Gln Asn Val Gly Leu Thr
 485 490 495
 His Val Trp Gly Pro Leu Thr Val Asn Ser Thr Leu Cys Ala Ala Leu
 500 505 510
 Asp His Asn Ala Met Val Arg Ile Cys Ser Lys Lys Asp His Thr Tyr
 515 520 525
 Gly Lys Trp Asp Thr Phe Gly Met Arg Gly Thr Leu Gly Ala Ser Tyr
 530 535 540
 Thr Phe Leu Glu Tyr Asp Gln Thr Met Arg Val Phe Ser Phe Ala Asn
 545 550 555 560
 Ile Glu Ala Thr Asn Ile Leu Gln Arg Ala Phe Thr Glu Thr Gly Tyr
 565 570 575
 Asn Pro Arg Ser Phe Ser Lys Thr Lys Leu Leu Asn Ile Ala Ile Pro
 580 585 590
 Ile Gly Ile Gly Tyr Glu Phe Cys Leu Gly Asn Ser Ser Phe Ala Leu
 595 600 605
 Leu Gly Lys Gly Ser Ile Gly Tyr Ser Arg Asp Ile Lys Arg Glu Asn
 610 615 620
 Pro Ser Thr Leu Ala His Leu Ala Met Asn Asp Phe Ala Trp Thr Thr
 625 630 635 640
 Asn Gly Cys Ser Val Pro Thr Ser Ala His Thr Leu Ala Asn Gln Leu
 645 650 655
 Ile Leu Arg Tyr Lys Ala Cys Ser Leu Tyr Ile Thr Ala Tyr Thr Ile
 660 665 670
 Asn Arg Glu Gly Lys Asn Leu Ser Asn Ser Leu Ser Cys Gly Gly Tyr
 675 680 685
 Val Gly Phe

690

<210> 314
 <211> 38
 <212> DNA
 <213> *Chlamydia trachomatis*

<400> 314
 gagagcggcc gctcatgatt aaaagaactt ctctatcc 38

<210> 315
 <211> 36
 <212> DNA
 <213> *Chlamydia trachomatis*

<400> 315
 agcggccgct tataattctg catcatcttc tatggc 36

<210> 316
 <211> 1941
 <212> DNA
 <213> *Chlamydia trachomatis*

<400> 316
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcggggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcgtg cgacggcgct ccgatacaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcattcatcc cgttgacgtc atctcgttga cctggcaaac caagtccggc 360
 ggcaacgcgt cagggaaact gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcatcag cggcgccgct catgattaaa agaacttctc tatcctttgc ttgcctcagt 480
 tttttttatc ttccaactat atccattttg caagctaagt aaacggatac gctacagttc 540
 cggcgattta ctttttcgga tagagagatt cagttcgtcc tagatccccc ctctttaatt 600
 accgccccaa acatcgtttt atctaattta cagtcaaacg gaaccggagc ctgtaccatt 660
 tcaggcaata cgcaaaccca aatcttttct aattcogtta acaccacgc agattctcgtt 720
 ggagcctttg atatggtttac taactcattc acggcctctg ataagtctaa tctactcttc 780
 tgcaacaact actgcacaca taataaaagg ggaggagcta ttcgctccgg aggaacctatt 840
 cgattcttaa ataatacaaga cgtgcttttt tataataaca tatcggcagg ggctaaatat 900
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 gcccttaatt tatcgaaacc acgttcacgg acaaattata tccatacagg gacaggcgat 1560
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 aataacccac catctcctac cagttagaac accattaccg ttaacccgga aacagagttt 1800
 tctggagctg ttgtgttctc ctacaatcaa atgtctagt catcacgaac tctgatgggt 1860
 aaagaacaca attacattaa agaagcccca actactttaa aattcggaac gctagccata 1920
 gaagatgatg cagaattata a 1941

<210> 317
 <211> 646
 <212> PRT

<213> Chlamydia trachomatis

<400> 317

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 20      25      30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35      40      45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50      55      60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65      70      75      80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85      90      95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100      105      110
Val Thr Trp Gln Thr Lys Ser Gly Thr Arg Thr Gly Asn Val Thr
 115      120      125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130      135      140
Arg Pro Leu Met Ile Lys Arg Thr Ser Leu Ser Phe Ala Cys Leu Ser
 145      150      155      160
Phe Phe Tyr Leu Ser Thr Ile Ser Ile Leu Gln Ala Asn Glu Thr Asp
 165      170      175
Thr Leu Gln Phe Arg Arg Phe Thr Phe Ser Asp Arg Glu Ile Gln Phe
 180      185      190
Val Leu Asp Pro Ala Ser Leu Ile Thr Ala Gln Asn Ile Val Leu Ser
 195      200      205
Asn Leu Gln Ser Asn Gly Thr Gly Ala Cys Thr Ile Ser Gly Asn Thr
 210      215      220
Gln Thr Gln Ile Phe Ser Asn Ser Val Asn Thr Thr Ala Asp Ser Gly
 225      230      235      240
Gly Ala Phe Asp Met Val Thr Thr Ser Phe Thr Ala Ser Asp Asn Ala
 245      250      255
Asn Leu Leu Phe Cys Asn Asn Tyr Cys Thr His Asn Lys Gly Gly Gly
 260      265      270      275
Ala Ile Arg Ser Gly Gly Pro Ile Arg Phe Leu Asn Asn Gln Asp Val
 280      285      290
Leu Phe Tyr Asn Asn Ile Ser Ala Gly Ala Lys Tyr Val Gly Thr Gly
 295      300      305
Asp His Asn Glu Lys Asn Arg Gly Gly Ala Leu Tyr Ala Thr Thr Ile
 310      315      320
Thr Leu Thr Gly Asn Arg Thr Leu Ala Phe Ile Asn Asn Met Ser Gly
 325      330      335
Asp Cys Gly Gly Ala Ile Ser Ala Asp Thr Gln Ile Ser Ile Thr Asp
 340      345      350
Thr Val Lys Gly Ile Leu Phe Glu Asn Asn His Thr Leu Asn His Ile
 355      360      365
Pro Tyr Thr Gln Ala Glu Asn Met Ala Arg Gly Gly Ala Ile Cys Ser
 370      375      380
Arg Arg Asp Leu Cys Ser Ile Ser Asn Asn Ser Gly Pro Ile Val Phe
 385      390      395      400
Asn Tyr Asn Gln Gly Gly Lys Gly Gly Ala Ile Ser Ala Thr Arg Cys
 405      410      415
Val Ile Asp Asn Asn Lys Glu Arg Ile Ile Phe Ser Asn Asn Ser Ser
 420      425      430
Leu Gly Trp Ser Gln Ser Ser Ser Ala Ser Asn Gly Gly Ala Ile Gln
 435      440      445
Thr Thr Gln Gly Phe Thr Leu Arg Asn Asn Lys Gly Ser Ile Tyr Phe
 450      455      460

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Asp Ser Asn Thr Ala Thr His Ala Gly Gly Ala Ile Asn Cys Gly Tyr
 465 470 475 480
 Ile Asp Ile Arg Asp Asn Gly Pro Val Tyr Phe Leu Asn Asn Ser Ala
 485 490 495
 Ala Trp Gly Ala Ala Phe Asn Leu Ser Lys Pro Arg Ser Ala Thr Asn
 500 505 510
 Tyr Ile His Thr Gly Thr Gly Asp Ile Val Phe Asn Asn Val Val
 515 520 525
 Phe Thr Leu Asp Gly Asn Leu Leu Gly Lys Arg Lys Leu Phe His Ile
 530 535 540
 Asn Asn Asn Glu Ile Thr Pro Tyr Thr Leu Ser Leu Gly Ala Lys Lys
 545 550 555 560
 Asp Thr Arg Ile Tyr Phe Tyr Asp Leu Phe Gln Trp Glu Arg Val Lys
 565 570 575
 Glu Asn Thr Ser Asn Asn Pro Pro Ser Pro Thr Ser Arg Asn Thr Ile
 580 585 590
 Thr Val Asn Pro Glu Thr Glu Phe Ser Gly Ala Val Val Phe Ser Tyr
 595 600 605
 Asn Gln Met Ser Ser Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn
 610 615 620
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 625 630 635 640
 Glu Asp Asp Ala Glu Leu
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<210> 318

<211> 34

<212> DNA

<213> Chlamydia trachomatis

<400> 318

gagagcggcc gctcgacata cgaactctga tggg

34

<210> 319

<211> 33

<212> DNA

<213> Chlamydia trachomatis

<400> 319

gagagcggcc gcttaaaaga ccagagctcc tcc

33

<210> 320

<211> 2148

<212> DNA

<213> Chlamydia trachomatis

<400> 320

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accgttcata	tccgggcctac	cgcttctctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacacag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccaac	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtagcgtc	atctcgggtg	cctggcaaac	caagtccggc	360
ggcagcgcta	cagggaacgt	gacattggcc	gagggaaccc	cggccgaatt	ctgcagatat	420
ccatcaacact	ggcggccgct	cgacatacga	actctgatgg	gtaaaagaaca	caattacatt	480
aaagaagccc	caactacttt	aaaattcggg	acgctagcca	tagaagatga	tgcagaatta	540
gaaatcttca	atatcccggt	taocccaaaat	ccgactagcc	ttcttctgtt	aggaagcgcc	600
gctacgctga	ctgttggaaa	gcacggtaag	ctcaatatga	caaactcttg	tgttatttta	660
cccattattc	tcaaaagaggg	gaagagtcgg	ccttgtattc	gcgtcaaccc	acaagatatg	720
accocaaaata	ctggtaccgg	ccaaactcca	tcaagcacia	gtagtataag	cactccaatg	780
attatcttta	atgggcgcct	ctcaattgta	gacgaaaatt	atgaatcagt	ctacgacagt	840

atggacacct	ccagaggagg	agcagaacaa	ctaattctat	ccatagaaac	cactaatgat	900
gggcaattag	actccaattg	gcaaagttct	ctgaataact	ctctactctc	tcctccacac	960
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gaaactttta	ctcctagtaa	cacaactaca	gotagtatcc	ctaattat	agcttccgca	1140
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gaaaaagaaa	caaataaccg	cccttcttct	cgttactatc	tttctgcttt	atgtttcgaa	1560
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gatctagcta	gattattttac	attagagcaa	gccataactg	ccgttgctctc	tcacatagga	1860
atcaaaaggag	cttattcttc	tgatacatgg	ccaacactct	cttgggaat	ggaaactagct	1920
taccaaccca	ccctctactg	gaaacgtctc	ctactcaaca	cactattaat	ccaaaaataac	1980
ggttcttggg	tcaccacaaa	taccccat	gctaaacatt	ccctttatgg	gagaggttct	2040
cactccctca	aattttctca	cttgaaacta	ttgtctaact	atcaagcaga	agtggttact	2100
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<210> 321

<211> 715

<212> PRT

<213> Chlamydia trachomatis

<400> 321

Met	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
				20				25				30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
				35				40				45		
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg
				50				55			60			
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser
				65				70			75			
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala
				85				90				95		
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile
				100				105				110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val
				115				120				125		
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His
				130				135			140			
Arg	Pro	Leu	Asp	Ile	Arg	Thr	Leu	Met	Gly	Lys	Glu	His	Asn	Tyr
				145				150			155			
Lys	Glu	Ala	Pro	Thr	Thr	Leu	Lys	Phe	Gly	Thr	Leu	Ala	Ile	Glu
				165				170				175		
Asp	Ala	Glu	Leu	Glu	Ile	Phe	Asn	Ile	Pro	Phe	Thr	Gln	Asn	Pro
				180				185				190		
Ser	Leu	Leu	Ala	Leu	Gly	Ser	Gly	Ala	Thr	Leu	Thr	Val	Gly	Lys
				195				200				205		
Gly	Lys	Leu	Asn	Ile	Thr	Asn	Leu	Gly	Val	Ile	Leu	Pro	Ile	Ile
				210				215			220			
Lys	Glu	Gly	Lys	Ser	Pro	Pro	Cys	Ile	Arg	Val	Asn	Pro	Gln	Asp
				225				230			235			
Thr	Gln	Asn	Thr	Gly	Thr	Gly	Gln	Thr	Pro	Ser	Ser	Thr	Ser	Ile
				245				250				255		

Ser Thr Pro Met Ile Ile Phe Asn Gly Arg Leu Ser Ile Val Asp Glu
 260 265 270
 Asn Tyr Glu Ser Val Tyr Asp Ser Met Asp Leu Ser Arg Gly Lys Ala
 275 280 285
 Glu Gln Leu Ile Leu Ser Ile Glu Thr Thr Asn Asp Gly Gln Leu Asp
 290 295 300
 Ser Asn Trp Gln Ser Ser Leu Asn Thr Ser Leu Leu Ser Pro Pro His
 305 310 315 320
 Tyr Gly Tyr Gln Gly Leu Trp Thr Pro Asn Trp Ile Thr Thr Thr Tyr
 325 330 335
 Thr Ile Thr Leu Asn Asn Asn Ser Ser Ala Pro Thr Ser Ala Thr Ser
 340 345 350
 Ile Ala Glu Gln Lys Lys Thr Ser Glu Thr Phe Thr Pro Ser Asn Thr
 355 360 365
 Thr Thr Ala Ser Ile Pro Asn Ile Lys Ala Ser Ala Gly Ser Gly Ser
 370 375 380
 Gly Ser Ala Ser Asn Ser Gly Glu Val Thr Ile Thr Lys His Thr Leu
 385 390 395 400
 Val Val Asn Trp Ala Pro Val Gly Tyr Ile Val Asp Pro Ile Arg Arg
 405 410 415
 Gly Asp Leu Ile Ala Asn Ser Leu Val His Ser Gly Arg Asn Met Thr
 420 425 430
 Met Gly Leu Arg Ser Leu Leu Pro Asp Asn Ser Trp Phe Ala Leu Gln
 435 440 445
 Gly Ala Ala Thr Thr Leu Phe Thr Lys Gln Gln Lys Arg Leu Ser Tyr
 450 455 460
 His Thr Tyr Ser Ser Ala Ser Lys Gly Tyr Thr Val Ser Ser Gln Ala
 465 470 475 480
 Ser Gly Ala His Gly His Lys Phe Leu Leu Ser Phe Ser Gln Ser Ser
 485 490 495
 Asp Lys Met Lys Glu Lys Glu Thr Asn Asn Arg Leu Ser Ser Arg Tyr
 500 505 510
 Tyr Leu Ser Ala Leu Cys Phe Glu His Pro Met Phe Asp Arg Ile Ala
 515 520 525
 Leu Ile Gly Ala Ala Ala Cys Asn Tyr Gly Thr His Asn Met Arg Ser
 530 535 540
 Phe Tyr Gly Thr Lys Lys Ser Ser Lys Gly Lys Phe His Ser Thr Thr
 545 550 555 560
 Leu Gly Ala Ser Leu Arg Cys Glu Leu Arg Asp Ser Met Pro Leu Arg
 565 570 575
 Ser Ile Met Leu Thr Pro Phe Ala Gln Ala Leu Phe Ser Arg Thr Glu
 580 585 590
 Pro Ala Ser Ile Arg Glu Ser Gly Asp Leu Ala Arg Leu Phe Thr Leu
 595 600 605
 Glu Gln Ala His Thr Ala Val Val Ser Pro Ile Gly Ile Lys Gly Ala
 610 615 620
 Tyr Ser Ser Asp Thr Trp Pro Thr Leu Ser Trp Glu Met Glu Leu Ala
 625 630 635 640
 Tyr Gln Pro Thr Leu Tyr Trp Lys Arg Pro Leu Leu Asn Thr Leu Leu
 645 650 655
 Ile Gln Asn Asn Gly Ser Trp Val Thr Thr Asn Thr Pro Leu Ala Lys
 660 665 670
 His Ser Phe Tyr Gly Arg Gly Ser His Ser Leu Lys Phe Ser His Leu
 675 680 685
 Lys Leu Phe Ala Asn Tyr Gln Ala Glu Val Ala Thr Ser Thr Val Ser
 690 695 700
 His Tyr Ile Asn Ala Gly Gly Ala Leu Val Phe
 705 710 715

<210> 322

<211> 37

<212> DNA
 <213> Chlamydia trachomatis

<400> 322
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<210> 323
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 323
 gagagcggcc gcttacacag atccattacc ggactg 36

<210> 324
 <211> 1896
 <212> DNA
 <213> Chlamydia trachomatis

<400> 324
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 ggcgcacgag tccaacgcgt ggtcggggag gctccggcgg caagtctcgg catctccacc 240
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 gcgcttaacg ggcatcatcc cggtagcgtc atctcggtga cctggcaaac caagtccggc 360
 ggcaacgcgt cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccacacacat cggcgccgct catgcctttt tctttgagat ctacatcatt ttgtttttta 480
 gcttgttttg gttcctattc gtagggattc gcgagctctc ctcaagtgtt aacacctaat 540
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 accggacaaa accatacatt atcatttaca gattctcaag ggccagtttt tcaaaattat 720
 gccttcattt cagcaggaga gacacttact ctgaaagatt ttctcagttt gatgtctctg 780
 aaaaaatggtt cttgcggaga aaagggaatg atctcaggga aaaccgtgag tatttccgga 840
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 gtcacgatta atcagtcggg taatggtatc gtgttaa 1896

<210> 325
 <211> 631
 <212> PRT
 <213> Chlamydia trachomatis

<400> 325
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 20
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 35
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130
 Arg Pro Leu Met Pro Phe Ser Leu Arg Ser Thr Ser Phe Cys Phe Leu
 145
 Ala Cys Leu Cys Ser Tyr Ser Tyr Gly Phe Ala Ser Ser Pro Gln Val
 165
 Leu Thr Pro Asn Val Thr Thr Pro Phe Lys Gly Asp Asp Val Tyr Leu
 180
 Asn Gly Asp Cys Ala Phe Val Asn Val Tyr Ala Gly Ala Glu Asn Gly
 195
 Ser Ile Ile Ser Ala Asn Gly Asp Asn Leu Thr Ile Thr Gly Gln Asn
 210
 His Thr Leu Ser Phe Thr Asp Ser Gln Gly Pro Val Leu Gln Asn Tyr
 225
 Ala Phe Ile Ser Ala Gly Glu Thr Leu Thr Lys Asp Phe Ser Ser
 245
 Leu Met Phe Ser Lys Asn Val Ser Cys Gly Glu Lys Gly Met Ile Ser
 260
 Gly Lys Thr Val Ser Ile Ser Gly Ala Gly Glu Val Ile Phe Trp Asp
 275
 Asn Ser Val Gly Tyr Ser Pro Leu Ser Ile Val Pro Ala Ser Thr Pro
 290
 Thr Pro Pro Ala Pro Ala Pro Ala Ala Ser Ser Ser Leu Ser
 305
 Pro Thr Val Ser Asp Ala Arg Lys Gly Ser Ile Phe Ser Val Glu Thr
 325
 Ser Leu Glu Ile Ser Gly Val Lys Lys Gly Val Met Phe Asp Asn Asn
 340
 Ala Gly Asn Phe Gly Thr Val Phe Arg Gly Asn Ser Asn Asn Ala
 355
 Gly Ser Gly Gly Ser Gly Ser Ala Thr Thr Pro Ser Phe Thr Val Lys
 370
 Asn Cys Lys Gly Lys Val Ser Phe Thr Asp Asn Val Ala Ser Cys Gly
 385
 Gly Gly Val Val Tyr Lys Gly Thr Val Leu Phe Lys Asp Asn Glu Gly
 405
 Gly Ile Phe Phe Arg Gly Asn Thr Ala Tyr Asp Asp Leu Gly Ile Leu
 420
 Ala Ala Thr Ser Arg Asp Gln Asn Thr Glu Thr Gly Gly Gly Gly
 435
 Val Ile Cys Ser Pro Asp Asp Ser Val Lys Phe Glu Gly Asn Lys Gly
 450
 Ser Ile Val Phe Asp Tyr Asn Phe Ala Lys Gly Arg Gly Gly Ser Ile
 465
 Leu Thr Lys Glu Phe Ser Leu Val Ala Asp Asp Ser Val Val Phe Ser
 485
 Asn Asn Thr Ala Glu Lys Gly Gly Gly Ala Ile Tyr Ala Pro Thr Ile
 495

500
 Asp Ile Ser Thr Asn Gly Gly Ser 505
 515 Ile Leu Phe Glu Arg Asn Arg Ala
 Ala Glu Gly Gly Ala Ile Cys Val Ser Glu Ala Ser Ser Gly Ser Thr
 530 535 540
 Gly Asn Leu Thr Leu Ser Ala Ser Asp Gly Asp Ile Val Phe Ser Gly
 545 550 555 560
 Asn Met Thr Ser Asp Arg Pro Gly Glu Arg Ser Ala Ala Arg Ile Leu
 565 570 575
 Ser Asp Gly Thr Thr Val Ser Leu Asn Ala Ser Gly Leu Ser Lys Leu
 580 585 590
 Ile Phe Tyr Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser
 595 600 605
 Thr Pro Ser Pro Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn
 610 615 620
 Gln Ser Gly Asn Gly Ser Val
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<210> 326

<211> 40

<212> DNA

<213> Chlamydia trachomatis

<400> 326

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40

<210> 327

<211> 33

<212> DNA

<213> Chlamydia trachomatis

<400> 327

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33

<210> 328

<211> 2148

<212> DNA

<213> Chlamydia trachomatis

<400> 328

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accgttcata	tcgggacctac	cgctctctct	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgcacag	tccaaacggt	ggctcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cgggccacgc	gatggcgagc	300
gcgcttaacg	ggcatcatcc	cggtagcgtc	atctcgggtg	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cgggccgaatt	ctgcagatat	420
ccatcacact	ggcggcgcgt	cgatcctgta	gtacaaaata	attcagcagc	gggtgcatcg	480
acaccatcac	catcttcttc	ttctatgcct	ggctctgtca	cgattaatca	gtcccgtaat	540
ggatctgtga	tttttaccgc	cgagtcattg	actccttcag	aaaaacttca	agttcttaac	600
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cctgtagtcta	aggggatggt	acctccta	accaataaca	ctctgtatct	gacatggaga	1140
ctcgtctcga	attacggtga	atatcgactg	gatoctcaga	gaaaggggaa	gaaagtaacc	1200
aactctcttt	gggtagcggg	atctgcatta	agaaccttta	ctaattggtt	gaaagaacac	1260

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cagacaaga	gcagaatgta	ttactctaaa	gatgctggga	acatgacgat	gttgtcctgt	1500
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tatggctatt	ctgtgcacag	aatgcatacg	cagtatttta	atgcacaaac	gcagaagttc	1620
gatcatcga	aatgtcattg	gcacaacaat	aactattatg	cgtttgtagg	tgccgagcat	1680
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catgcagttt	ctcatgtcgc	aagatctcct	ccttctaacc	tgacactaaa	tatgggatat	1920
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aagacaccta	tacaaggatc	cccgtggcca	cggcatgcct	tcctcttaga	agtgcatgat	2040
actttgtata	ttcatcattt	tggaagagcc	tatatgaact	atlcattaga	tgctcgtcgt	2100
cgacaaaccg	cacattttgt	atctatgggc	ttgaatagaa	tccttttaa		2148

<210> 329

<211> 715

<212> FRT

<213> Chlamydia trachomatis

<400> 329

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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
			20					25				30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
		35				40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg
		50				55					60			
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser
		65			70					75			80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala
				85				90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile
			100					105					110	
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val
		115				120						125		
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His
		130				135					140			
Arg	Pro	Leu	Asp	Pro	Val	Val	Gln	Asn	Asn	Ser	Ala	Ala	Gly	Ala
		145			150					155				160
Thr	Pro	Ser	Pro	Ser	Ser	Ser	Ser	Met	Pro	Gly	Ala	Val	Thr	Ile
				165					170					175
Gln	Ser	Gly	Asn	Gly	Ser	Val	Ile	Phe	Thr	Ala	Glu	Ser	Leu	Thr
			180					185					190	
Ser	Glu	Lys	Leu	Gln	Val	Leu	Asn	Ser	Thr	Ser	Asn	Phe	Pro	Gly
		195				200						205		
Leu	Thr	Val	Ser	Gly	Gly	Glu	Leu	Val	Val	Thr	Glu	Gly	Ala	Thr
		210				215					220			
Thr	Thr	Gly	Thr	Ile	Thr	Ala	Thr	Ser	Gly	Arg	Val	Thr	Leu	Gly
		225			230					235				240
Gly	Ala	Ser	Leu	Ser	Ala	Val	Ala	Gly	Ala	Ala	Asn	Asn	Asn	Tyr
			245					250						255
Cys	Thr	Val	Ser	Lys	Leu	Gly	Ile	Asp	Leu	Glu	Ser	Phe	Leu	Thr
		260						265					270	
Asn	Tyr	Lys	Thr	Ala	Ile	Leu	Gly	Ala	Asp	Gly	Thr	Val	Thr	Val
		275				280						285		
Ser	Gly	Ser	Thr	Leu	Asp	Leu	Val	Met	Glu	Asn	Glu	Ala	Glu	Val
		290				295				300				
Asp	Asn	Pro	Leu	Phe	Val	Gly	Ser	Leu	Thr	Ile	Pro	Phe	Val	Thr

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305                               310                               315                               320
Ser Ser Ser Ser Ala Ser Asn Gly Val Thr Lys Asn Ser Val Thr Ile
                               325                               330                               335
Asn Asp Ala Asp Ala Ala His Tyr Gly Tyr Gln Gly Ser Trp Ser Ala
                               340                               345                               350
Asp Trp Thr Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro
                               355                               360                               365
Pro Asn Thr Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn
                               370                               375                               380
Tyr Gly Glu Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro
                               385                               390                               395
Asn Ser Leu Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly
                               405                               410                               415
Leu Lys Glu His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu
                               420                               425                               430
His Ala Leu Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp
                               435                               440                               445
Gly Phe Leu Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His
                               450                               455                               460
Tyr Glu Asn Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly
                               465                               470                               475
Gln Thr Lys Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr
                               485                               490                               495
Met Leu Ser Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu
                               500                               505                               510
Thr Val Met Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met
                               515                               520                               525
His Thr Gln Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys
                               530                               535                               540
Cys His Trp His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His
                               545                               550                               555
Asn Phe Leu Glu Tyr Cys Ile Pro Thr Arg Gln Leu Ala Arg Asp Tyr
                               565                               570                               575
Glu Leu Thr Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser
                               580                               585                               590
Ser Thr Arg Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser
                               595                               600                               605
Gly His Asn Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser
                               610                               615                               620
His Val Arg Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr
                               625                               630                               635
Arg Pro Asp Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile
                               645                               650                               655
Ala Asn Gly Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His
                               660                               665                               670
Ala Phe Phe Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly
                               675                               680                               685
Arg Ala Tyr Met Asn Tyr Ser Leu Asp Ala Arg Arg Arg Gln Thr Ala
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His Phe Val Ser Met Gly Leu Asn Arg Ile Phe
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<210> 330

<211> 38

<212> DNA

<213> Chlymadia trachomatis

<400> 330

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<210> 331

<211> 34
 <212> DNA
 <213> Chlymadia trachomatis

<400> 331
 gagcgccgc ttacttaaatg cgaatttctt caag 34

<210> 332
 <211> 1557
 <212> DNA
 <213> Chlymadia trachomatis

<400> 332
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 accgttcata tcgggcctac cgccttctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcgt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcattatcc cgttgacgtc atctcgtga cctggcaaac caagtccggc 360
 ggcacgcgta cagggaaact gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatacaact ggcggccgct catgaaatgg ctgtcagcta ctgcggtgtt tgctgctgtt 480
 ctccctccag ttccagggtt ttgcttccca gaacctaaag aattaaattt ctctcgcgta 540
 gaaacttctt cctctaccac ttttactgaa acaattggag aagctggggc agaataatc 600
 gtctctggta acgcatcttt cacaaaattt accaacattc ctactaccga tacaacaact 660
 cccacgaact caaactcttc tagctctagc ggagaaactg ctctcgtttc tgaggatagt 720
 gactctacaa caacgactcc tgatctctaa ggtggcggcg cctttataa cgcgcactcc 780
 ggagttttgt cttttatgac acgatcagga acagaaggtt ccttaactct gtctgagata 840
 aaaatgactg gtgaaggcgg tgctatcttc tctcaaggag agctgctatt tacagatctg 900
 acaagtctaa ccatccaaa taacttatcc cagctatccg gagagcgcat ttttggagga 960
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<210> 333
 <211> 518
 <212> PRT
 <213> Chlymadia trachomatis

<400> 333
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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr

115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val
 145 150 155 160
 Leu Pro Ser Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn
 165 170 175
 Phe Ser Arg Val Glu Thr Ser Ser Ser Thr Phe Thr Glu Thr Ile
 180 185 190
 Gly Glu Ala Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr
 195 200 205
 Lys Phe Thr Asn Ile Pro Thr Thr Asp Thr Thr Thr Thr Asn Ser
 210 215 220
 Asn Ser Ser Ser Ser Gly Glu Thr Ala Ser Val Ser Glu Asp Ser
 225 230 235 240
 Asp Ser Thr Thr Thr Thr Pro Asp Pro Lys Gly Gly Ala Phe Tyr
 245 250 255
 Asn Ala His Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu
 260 265 270
 Gly Ser Leu Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Ala
 275 280 285
 Ile Phe Ser Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Ser Leu Thr
 290 295 300
 Ile Gln Asn Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly
 305 310 315 320
 Ser Thr Ile Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn
 325 330 335
 Ser Ala Glu Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala
 340 345 350
 Gln Thr Ala Ser Glu Thr Ser Gly Ser Ser Ser Ser Gly Asn Asp
 355 360 365
 Ser Val Ser Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Asn
 370 375 380
 Leu Gln Ser His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr
 385 390 395 400
 Asp Thr Glu Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Ala
 405 410 415
 Ile Tyr Ala Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu
 420 425 430
 Phe Ser Ile Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu
 435 440 445
 Lys Asp Val Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn
 450 455 460
 Gly Ala Glu Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser
 465 470 475 480
 Ile Gln Ser Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln
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 500 505 510
 Glu Glu Ile Arg Ile Lys
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<210> 334

<211> 37

<212> DNA

<213> Chlymadia trachomatis

<400> 334

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<210> 335

<211> 39
 <212> DNA
 <213> Chlamydia trachomatis

<400> 335
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39

<210> 336
 <211> 1758
 <212> DNA
 <213> Chlamydia trachomatis

<400> 336
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 aatggtgggt gagccacac atgccagat agcttcccaa cggcggatc tgcagaacag 1380
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 <211> 585
 <212> PRT
 <213> Chlamydia trachomatis

<400> 337
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 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr

85										90					95				
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser				
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr				
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp				
Arg	Pro	Leu	Gly	Asp	Leu	Ser	Ile	Gln	Ser	Ser	Lys	Gln	Ser	Leu	Phe				
Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly	Ala	Leu	Tyr	Val	Glu	Gly				
Gly	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile	Arg	Ile	Lys	Tyr	Asn	Lys				
Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr	Leu	Pro	Ser	Leu	Lys	Ala				
Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser	Ser	Ser	Pro	Gln				
Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asp	Ser	Gly	Asp	Ser	Ser	Ser				
Gly	Gly	Ser	Asp	Ser	Asp	Thr	Ser	Glu	Thr	Val	Pro	Val	Thr	Ala	Lys				
Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr	Asn	Ile	Thr	Gly				
Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val	Gly	Gly	Gly	Ala				
Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His	Arg	Leu	Gln	Phe				
Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	Ile	Tyr	Gly	Glu	Asp				
Asn	Ile	Thr	Leu	Ser	Asn	Leu	Thr	Gly	Lys	Thr	Leu	Phe	Gln	Glu	Asn				
Thr	Ala	Lys	Glu	Glu	Gly	Gly	Gly	Leu	Phe	Ile	Lys	Gly	Thr	Asp	Lys				
Ala	Leu	Thr	Met	Thr	Gly	Leu	Asp	Ser	Phe	Cys	Leu	Ile	Asn	Asn	Thr				
Ser	Glu	Lys	His	Gly	Gly	Gly	Ala	Phe	Val	Thr	Lys	Glu	Ile	Ser	Gln				
Thr	Tyr	Thr	Ser	Asp	Val	Glu	Thr	Ile	Pro	Gly	Ile	Thr	Pro	Val	His				
Thr	Gly	Thr	Val	Ile	Thr	Gly	Asn	Lys	Ser	Thr	Gly	Gly	Asn	Gly	Gly				
Gly	Val	Cys	Thr	Lys	Arg	Leu	Ala	Leu	Ser	Asn	Leu	Gln	Ser	Ile	Ser				
Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly	Ala	His	Thr	Cys				
Pro	Asp	Ser	Phe	Pro	Thr	Ala	Asp	Thr	Ala	Glu	Gln	Pro	Ala	Ala	Ala				
Ser	Ala	Ala	Thr	Ser	Thr	Pro	Lys	Ser	Ala	Pro	Val	Ser	Thr	Ala	Leu				
Ser	Thr	Pro	Ser	Ser	Ser	Thr	Val	Ser	Ser	Leu	Thr	Leu	Leu	Ala	Ala				
Ser	Ser	Gln	Ala	Ser	Pro	Ala	Thr	Ser	Asn	Lys	Glu	Thr	Gln	Asp	Pro				
Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr	Val	Val	Asp	Thr	Thr	Ile				
Ser	Lys	Asn	Thr	Ala	Lys	Lys	Gly	Gly	Gly	Ile	Tyr	Ala	Lys	Lys	Ala				
Lys	Met	Ser	Arg	Ile	Asp	Gln	Leu	Asn	Ile	Ser	Glu	Asn	Ser	Ala	Thr				
Glu	Ile	Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser	Leu	Glu	Leu	Asp	Ala				

Leu Val Ser Leu Ser Val Thr Glu Asn
580 585

<210> 338

<211> 38

<212> DNA

<213> Chlamydia trachomatis

<400> 338

gagagcggcc gctcgaccaa ctgaatatct ctgagaac

38

<210> 339

<211> 35

<212> DNA

<213> Chlamydia trachomatis

<400> 339

gagagcggcc gcttaagaga ctacgtggag ttctg

35

<210> 340

<211> 1965

<212> DNA

<213> Chlamydia trachomatis

<400> 340

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cagggatctg	ccatttcgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgcttctctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcggggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcacgcgggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgaecgt	atctcggtga	cctggcaaac	caagtctggc	360
ggcaocgcgt	cagggaacgt	gacatttgcc	gagggacccc	cggcogaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgaccaacig	aatatctctg	agaactccgc	tacagagata	480
ggtggaggta	tctgctgtaa	agaatcttta	gaactagatg	ctctagtctc	cttatctgta	540
acagagaacc	ttgttgggaa	agaaggtgga	ggcttacatg	ctaaaaactg	aaatatttct	600
aatctgaaat	cagggtcttc	ttctcgaac	aacaaagcaa	actctctatc	cacaggagtc	660
gcaacaacag	cttcagcacc	tgtcgcagct	gctgcttccc	tacaagcagc	cgcagcagcc	720
gcaccatcat	ctccagcaac	accaacttat	tcaggtgtag	taggaggagc	tatctatgga	780
gaaaaggtta	cattctctca	atgtagcggg	acttgtcagt	tctctgggaa	ccaagctatc	840
gataacaact	ctccccaact	atcgttgaa	gtacaaggag	gagccatcta	tgccaaaacc	900
tcctttgtct	ttggatcttc	cgatgctgga	acctcctata	ttttctcggg	gaacagtgct	960
tcacactggga	aatctcaaac	aacagggcga	atagcgggag	gagcgatcta	ctcccactact	1020
gttacattga	attgtctctg	gacattctct	aacaatacag	cctctatagc	tacaccgagc	1080
acttctctct	aagatggatc	ctcaggaaat	tctattaaag	ataccattgg	aggagccatt	1140
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aattagctta	cagaaaaaat	tactttagaa	aacggttctt	ttatttttga	aagaaaccaa	1320
gctaataaac	gtggagcgat	ttactctcct	agcgtttcca	ttaaagggaa	taattattacc	1380
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atfgagtctt	taggatctgt	tcctttttaca	ggaaataacg	ttacagctac	acaagctagt	1500
tcctgacaac	ctggacaaaa	tacaaatact	gccaactatg	gggcagccat	ctttggagat	1560
ccaggaaacca	ctcaactgtc	tcaaacagat	gcatttttaa	ccctctctgc	tctctctgga	1620
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agctttttctg	attgtgtgca	caacctctacc	aaaaaaacag	gttccaacaca	aaagctttat	1800
gaaacttttag	atattaataa	agaagagaa	agtaattccat	atacaggaa	tattgtgttc	1860
tctttctgaat	tacatgaaa	caaatcttac	atcccaaga	atgcaatctct	tcacaaacgga	1920
acttttagttc	ttaaagagaa	aacagaactc	cacgtagtct	cttaa		1965

<210> 341

<211> 654

<212> PRT

<213> Chlamydia trachomatis

<400> 341

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130          135          140
Arg Pro Leu Asp Gln Leu Asn Ile Ser Glu Asn Ser Ala Thr Glu Ile
145          150          155          160
Gly Gly Gly Ile Cys Cys Lys Glu Ser Leu Glu Leu Asp Ala Leu Val
165          170          175          180
Ser Leu Ser Val Thr Glu Asn Leu Val Gly Lys Glu Gly Gly Gly Leu
180          185          190          195
His Ala Lys Thr Val Asn Ile Ser Asn Leu Lys Ser Gly Phe Ser Phe
195          200          205          210
Ser Asn Asn Lys Ala Asn Ser Ser Ser Thr Gly Val Ala Thr Thr Ala
210          215          220          225
Ser Ala Pro Ala Ala Ala Ala Ser Leu Gln Ala Ala Ala Ala Ala
225          230          235          240
Ala Pro Ser Ser Pro Ala Thr Pro Thr Tyr Ser Gly Val Val Gly Gly
245          250          255          260
Ala Ile Tyr Gly Glu Lys Val Thr Phe Ser Gln Cys Ser Gly Thr Cys
260          265          270          275
Gln Phe Ser Gly Asn Gln Ala Ile Asp Asn Asn Pro Ser Gln Ser Ser
275          280          285          290
Leu Asn Val Gln Gly Gly Ala Ile Tyr Ala Lys Thr Ser Leu Ser Ile
290          295          300          305
Gly Ser Ser Asp Ala Gly Thr Ser Tyr Ile Phe Ser Gly Asn Ser Val
305          310          315          320
Ser Thr Gly Lys Ser Gln Thr Thr Gly Gln Ile Ala Gly Gly Ala Ile
320          325          330          335
Tyr Ser Pro Thr Val Thr Leu Asn Cys Pro Ala Thr Phe Ser Asn Asn
340          345          350          355
Thr Ala Ser Ile Ala Thr Pro Lys Thr Ser Ser Glu Asp Gly Ser Ser
355          360          365          370
Gly Asn Ser Ile Lys Asp Thr Ile Gly Gly Ala Ile Ala Gly Thr Ala
370          375          380          385
Ile Thr Leu Ser Gly Val Ser Arg Phe Ser Gly Asn Thr Ala Asp Leu
385          390          395          400
Gly Ala Ala Ile Gly Thr Leu Ala Asn Ala Asn Thr Pro Ser Ala Thr
400          405          410          415
Ser Gly Ser Gln Asn Ser Ile Thr Gly Lys Ile Thr Leu Glu Asn Gly
420          425          430          435
Ser Phe Ile Phe Glu Arg Asn Gln Ala Asn Lys Arg Gly Ala Ile Tyr
435          440          445          450
Ser Pro Ser Val Ser Ile Lys Gly Asn Asn Ile Thr Phe Asn Gln Asn

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      450              455              460
Thr Ser Thr His Asp Gly Ser Ala Ile Tyr Phe Thr Lys Asp Ala Thr
465              470              475              480
Ile Glu Ser Leu Gly Ser Val Leu Phe Thr Gly Asn Asn Val Thr Ala
      485              490              495
Thr Gln Ala Ser Ser Ala Thr Ser Gly Gln Asn Thr Asn Thr Ala Asn
      500              505              510
Tyr Gly Ala Ala Ile Phe Gly Asp Pro Gly Thr Thr Gln Ser Ser Gln
      515              520              525
Thr Asp Ala Ile Leu Thr Leu Leu Ala Ser Ser Gly Asn Ile Thr Phe
      530              535              540
Ser Asn Asn Ser Leu Gln Asn Asn Gln Gly Asp Thr Pro Ala Ser Lys
545              550              555              560
Phe Cys Ser Ile Ala Gly Tyr Val Lys Leu Ser Leu Gln Ala Ala Lys
      565              570              575
Gly Lys Thr Ile Ser Phe Phe Asp Cys Val His Thr Ser Thr Lys Lys
      580              585              590
Thr Gly Ser Thr Gln Asn Val Tyr Glu Thr Leu Asp Ile Asn Lys Glu
      595              600              605
Glu Asn Ser Asn Pro Tyr Thr Gly Thr Ile Val Phe Ser Ser Glu Leu
      610              615              620
His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly
625              630              635              640
Thr Leu Val Leu Lys Glu Lys Thr Glu Leu His Val Val Ser
      645              650

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<210> 342

<211> 36

<212> DNA

<213> Chlamydia trachomatis

<400> 342

gagagcgccc gctcggaact attgtgttct cttctg

36

<210> 343

<211> 35

<212> DNA

<213> Chlamydia trachomatis

<400> 343

gagagcgccc gcttagaaga tcattcgagc accgc

35

<210> 344

<211> 2103

<212> DNA

<213> Chlamydia trachomatis

<400> 344

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cagggtattcg ccattccgat cggcgaggcg atggcgatcg cgggccagat caagcttccc      120
accgttcata tcgggcctac cgcttctctc ggcttgggtg ttgtcgacaa caacggcaac      180
ggcgacagtg tccaaccggt ggtcgggagc gctccggcgg caagtctcgg catctccacc      240
ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccacgcg gatggcggac      300
gcgcctaacg ggcatactcc cggtagacgc atctcgttga cctggcacaac caagtccggc      360
ggcacgcgta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat      420
ccatcacact ggcggccgct cggaactatt gtgttctctt ctgaattaca tgaatacaaa      480
tcttacatcc cacagaatgc aatccttcac aacggaaact tagttcttaa agagaaaaaa      540
gaactccacg tagtctcttt tgagcagaaa gaagggtcta aattaattat ggaacccgga      600
gctgtgttat ctaaccaaaa catagctaac ggagctctag ctatcaatgg gttaacgatt      660
gatctttcca gtatggggac tctcacaaga ggggaaatct tctctctccc agaattacgt      720
atcgttgcca cgacctctag tgcattccga ggaagcgggg tcagcagtag tataccaaca      780

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aatcctaaaa ggattttctgc agcagtgccct tcaggtttctg ccgcaactac tccaactatg 840
agcgagaaca aagtttttctc aacaggagac cttacttttaa tagatcctaa tggaaacttt 900
taccaaaacc ctatgtttagg aagogatcta gatgtaccac taattaaactc tccgaactaac 960
acaagtgcgc tccaagtcta tgattttaact ttatctgggg atcttttccc tcagaaaggg 1020
tacatgggaa cctggacatt agattctaact ccacaaacag ggaaacttca agccagatgg 1080
acattcgata cctatcgtcg ctgggtatac ataccatagg ataactattt ttatcggaac 1140
tctatottag gctcccaaaa ctcaatgatt gttgtgaagc aagggcttat caacaacatg 1200
ttgaataaag cccgcttoga tgatctcgtc tacaalaact tctgggttctc aggagtagga 1260
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ttgtcttoga atgaagctgc tcaagttatc tgcggagtcg caactagAAC cctctgctaga 1980
gcgaataaca gtactcaact atactctgtg cctctctgga ctctcatcgg aaactatac 2040
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taa 2103

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<210> 345

<211> 700

<212> PRT

<213> Chlamydia trachomatis

<400> 345

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Met His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20     25     30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35     40     45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50     55     60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65     70     75     80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85     90     95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100    105    110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115    120    125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130    135    140
Arg Pro Leu Gly Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys
145    150    155    160
Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu
165    170    175
Lys Glu Lys Thr Glu Leu His Val Val Ser Phe Glu Gln Lys Glu Gly
180    185    190
Ser Lys Leu Ile Met Glu Pro Gly Ala Val Leu Ser Asn Gln Asn Ile
195    200    205
Ala Asn Gly Ala Leu Ala Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser
210    215    220
Met Gly Thr Pro Gln Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg
225    230    235    240
Ile Val Ala Thr Thr Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser

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245 250 255
 Ser Ile Pro Thr Asn Pro Lys Arg Ile Ser Ala Ala Val Pro Ser Gly
 260 265 270
 Ser Ala Ala Thr Thr Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr
 275 280 285
 Gly Asp Leu Thr Leu Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro
 290 295 300
 Met Leu Gly Ser Asp Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn
 305 310 315 320
 Thr Ser Asp Val Gln Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe
 325 330 335
 Pro Gln Lys Gly Tyr Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln
 340 345 350
 Thr Gly Lys Leu Gln Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp
 355 360 365
 Val Tyr Ile Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly
 370 375 380
 Ser Gln Asn Ser Met Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met
 385 390 395 400
 Leu Asn Asn Ala Arg Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val
 405 410 415
 Ser Gly Val Gly Thr Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu
 420 425 430
 Glu Phe Ser Tyr Tyr Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys
 435 440 445
 Pro Arg Gln Asp Phe Ile Leu Gly Ala Ala Phe Ser Lys Ile Val Gly
 450 455 460
 Lys Thr Lys Ala Ile Lys Lys Met His Asn Tyr Phe His Lys Gly Ser
 465 470 475 480
 Glu Tyr Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe
 485 490 495
 Leu Leu Asn Lys Gln His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly
 500 505 510
 Val Val Ser Tyr Gly His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro
 515 520 525
 Ser Ile His Glu Arg Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu
 530 535 540
 Ala Asp Leu Arg Ile Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser
 545 550 555 560
 Ser Lys Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg
 565 570 575
 Gln Lys Gln Phe Thr Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp
 580 585 590
 Cys Ala Tyr Arg Asn Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly
 595 600 605
 Ala Ile Met Asn Cys Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala
 610 615 620
 Tyr Met Pro Ser Ile Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val
 625 630 635 640
 Leu Ser Ser Asn Glu Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg
 645 650 655
 Thr Ser Ala Arg Ala Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe
 660 665 670
 Trp Thr Leu Tyr Gly Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu
 675 680 685
 Ser Gln Met Thr Ser Cys Gly Ala Arg Met Ile Phe
 690 695 700

<210> 346

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 346

gagagcggcc gctcatgaaa tttatgtcag ctactgc

37

<210> 347

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 347

gagagcggcc gcttaccctg taattccagt gatggtc

37

<210> 348

<211> 1464

<212> DNA

<213> Chlamydia trachomatis

<400> 348

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cagggaattc	ccattccgat	cgggcaggcg	atggcgcagc	ogggccagat	caagcttccc	120
accgttcata	tcgggcoctac	cgccttctct	ggcttgggtg	ttgtcgacaa	caacggcacc	180
ggcgacagag	tcacaacggc	ggtcggggag	gctccggcgg	caagctctcg	catctccacc	240
ggcgacgcta	tcaccgcggt	cgacggcgct	ccgatcaact	cgggccaccg	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtagcgtc	atctcgggtg	cctggcacaac	caagtcgggc	360
ggcagcgcta	cagggaacgt	gacattggcc	gagggacccc	cggcgcgaat	ctgcagatat	420
ccatcacact	ggcggcgcgt	catgaaattt	atgtcagcta	ctgctgtatt	tgctgcagta	480
ctctctcccg	ttactgaggc	gagctcgatc	caagatcaaa	taaagaatac	cgactgcaat	540
gttagcaaa	taggatattc	aacttctcaa	gcatttactg	atatgatgct	agcagacaac	600
acagagtatc	gagctcgtga	tagtgtttca	ttctatgact	tttcgacatc	ttccggatta	660
octagaaaa	atcttagtag	tagtagtgaa	gcttctccaa	cgacagaagg	agtgctctta	720
ttctcatctg	gagaaaaaac	tgagaattca	caagattcag	ctccctcttc	tgagaaaact	780
gataagaaaa	cagaagaaga	actagacaat	ggcggaaatc	tttatgctag	agagaaaact	840
actatctcag	aattctcagg	ctctctctct	aattcaagca	tagaaactca	tgacaatagt	900
tttttcttgc	gagaagggtg	agttatcttt	gatcacagag	ttgcoctcaa	aaacggagga	960
gctattttgc	gagagaaga	ggtagtcctt	gaaaacataa	aattctctact	agtagaagta	1020
aatatctcgg	tcgagaaaag	gggtagcgct	tatgcaaaa	aacgagatc	tttagaaaa	1080
gttaccgaag	caaccttctc	ctccaatggt	ggggaacaa	gtgggtgggt	aatctattca	1140
gaacaagata	tgtttaatcag	tgattgcaac	aatgtacatt	tcacaaggga	tgctgcagga	1200
gcacacagag	taaaacaatg	tctggatgaa	gaaatgatgc	tattgtctac	agaatgcggt	1260
gatagcttat	ccgaagatgc	actggatagc	actccagaaa	cggaacagac	taagtcaaat	1320
gcgaataaac	atggttctgc	tgaacaacaa	gatcacaaag	tatcagaatc	accagaatca	1380
actcctagcc	ccgacgatgt	tttagtgtaa	ggtggtggta	tctatacaga	aaaatctttg	1440
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<210> 349

<211> 487

<212> PRT

<213> Chlamydia trachomatis

<400> 349

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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
		50					55				60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75				80	

Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Val
 145 150 155 160
 Leu Ser Ser Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn
 165 170 175
 Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe
 180 185 190
 Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser
 195 200 205
 Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His
 210 215 220
 Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser
 225 230 235 240
 Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser
 245 250 255
 Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly
 260 265 270
 Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser
 275 280 285
 Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Gly
 290 295 300
 Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly
 305 310 315 320
 Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu
 325 330 335
 Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala
 340 345 350
 Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe Ser Ser
 355 360 365
 Asn Gly Gly Glu Gln Gly Gly Gly Ile Tyr Ser Glu Gln Asp Met
 370 375 380
 Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala Ala Gly
 385 390 395 400
 Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val Leu Leu
 405 410 415
 Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser Thr Pro
 420 425 430
 Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser Ser Glu
 435 440 445
 Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser Pro
 450 455 460
 Asp Asp Val Leu Gly Lys Gly Gly Ile Tyr Thr Glu Lys Ser Leu
 465 470 475 480
 Thr Ile Thr Gly Ile Thr Gly
 485

<210> 350

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 350

gagagcggcc gctcgatata caagtatcag aatcacc

<210> 351
 <211> 37
 <212> DNA
 <213> Chlamydia trachomatis

<400> 351
 gagagcggcc gcttaagagg acgatgagac actctcg

37

<210> 352
 <211> 1752
 <212> DNA
 <213> Chlamydia trachomatis

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 <212> PRT
 <213> Chlamydia trachomatis

<400> 353
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 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
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 130 135 140
 Arg Pro Leu Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser
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 Pro Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys Ser
 165 170 175
 Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn Ile
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 Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser Cys
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 210 215 220
 Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr Thr
 225 230 235 240
 Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe Ser
 245 250 255
 Glu Asn Thr Ala Lys Gly His Gly Gly Gly Ile Cys Thr Asn Lys Leu
 260 265 270
 Ser Leu Ser Asn Leu Lys Thr Val Thr Leu Thr Lys Asn Ser Ala Lys
 275 280 285
 Glu Ser Gly Gly Ala Ile Phe Thr Asp Leu Ala Ser Ile Pro Thr Thr
 290 295 300
 Asp Thr Pro Glu Ser Ser Thr Pro Ser Ser Ser Pro Ala Ser Thr
 305 310 315 320
 Pro Glu Val Val Ala Ser Ala Lys Ile Asn Arg Phe Phe Ala Ser Thr
 325 330 335
 Ala Glu Pro Ala Ala Pro Ser Leu Thr Glu Ala Glu Ser Asp Gln Thr
 340 345 350
 Asp Gln Thr Glu Thr Ser Asp Thr Asn Ser Asp Ile Asp Val Ser Ile
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 Glu Asn Ile Leu Asn Val Ala Ile Asn Gln Asn Thr Ser Ala Lys Lys
 370 375 380
 Gly Gly Ala Ile Tyr Gly Lys Lys Ala Lys Leu Ser Arg Ile Asn Asn
 385 390 395 400
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 405 410 415
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 420 425 430
 Tyr Asn Ser Ala Ala Lys Glu Gly Gly Val Ile His Ser Lys Thr Val
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 Thr Leu Ser Asn Leu Lys Ser Thr Phe Thr Phe Ala Asp Asn Thr Val
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 Lys Ala Ile Val Glu Ser Thr Pro Glu Ala Pro Glu Glu Ile Pro Pro
 465 470 475 480
 Val Glu Gly Glu Glu Ser Thr Ala Thr Glu Asn Pro Asn Ser Asn Thr
 485 490 495
 Glu Gly Ser Ser Ala Asn Thr Asn Leu Glu Gly Ser Gln Gly Asp Thr
 500 505 510
 Ala Asp Thr Gly Thr Gly Val Val Asn Asn Glu Ser Gln Asp Thr Ser
 515 520 525
 Asp Thr Gly Asn Ala Glu Ser Gly Glu Gln Leu Gln Asp Ser Thr Gln
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 Ser Asn Glu Glu Asn Thr Leu Pro Asn Ser Ser Ile Asp Gln Ser Asn
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<211> 683

<212> PRT

<213> Chlamydia trachomatis

<400> 357

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Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
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Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130          135          140
Arg Pro Leu Asp Gln Ser Asn Glu Asn Thr Asp Glu Ser Ser Asp Ser
145          150          155
His Thr Glu Glu Ile Thr Asp Glu Ser Val Ser Ser Ser Ser Lys Ser
165          170          175
Gly Ser Ser Thr Pro Gln Asp Gly Gly Ala Ala Ser Ser Gly Ala Pro
180          185          190
Ser Gly Asp Gln Ser Ile Ser Ala Asn Ala Cys Leu Ala Lys Ser Tyr
195          200          205
Ala Ala Ser Thr Asp Ser Ser Pro Val Ser Asn Ser Ser Gly Ser Asp
210          215          220
Val Thr Ala Ser Ser Asp Asn Pro Asp Ser Ser Ser Gly Asp Ser
225          230          235
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245          250          255
Glu Thr Pro Thr Leu Ile Gly Gly Gly Ala Ile Tyr Gly Glu Thr Val
260          265          270
Lys Ile Glu Asn Phe Ser Gly Gln Gly Ile Phe Ser Gly Asn Lys Ala
275          280          285
Ile Asp Asn Thr Thr Glu Gly Ser Ser Ser Lys Ser Asn Val Leu Gly
290          295          300
Gly Ala Val Tyr Ala Lys Thr Leu Phe Asn Leu Asp Ser Gly Ser Ser
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325          330          335
Thr Gly Gln Val Ala Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Ile
340          345          350
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355          360          365
Asn Ala Thr Asp Thr Gln Arg Lys Asp Thr Phe Gly Gly Ala Ile Gly
370          375          380
Ala Thr Ser Ala Val Ser Leu Ser Gly Gly Ala His Phe Leu Glu Asn
385          390          395
Val Ala Asp Leu Gly Ser Ala Ile Gly Leu Val Pro Asp Thr Gln Asn
405          410          415
Thr Glu Thr Val Lys Leu Glu Ser Gly Ser Tyr Tyr Phe Glu Lys Asn
420          425          430

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Lys Ala Leu Lys Arg Ala Thr Ile Tyr Ala Pro Val Val Ser Ile Lys
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 450 455 460
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 465 470 475 480
 Leu Phe Thr Gly Asn Leu Val Thr Pro Thr Leu Ser Thr Thr Thr Glu
 485 490 495
 Gly Thr Pro Ala Thr Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala Ala
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 580 585 590
 Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser
 595 600 605
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 625 630 635 640
 Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe
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<211> 1248

<212> DNA

<213> Chlamydia

<400> 358

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caagctgggc	gatattccct	actttttgaa	aagctatctt	ttcgagcctc	ttctctctcg	360
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 <212> DNA
 <213> Chlamydia

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 <213> Chlamydia

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 gttgtctctt caaagattgt gagtttatgt tgctgtatgc aagaatgtgc 180
 aaagcagagt tgataaaaaa agaagcggtt gcttatttgt tttgtgagaa aagcgggata 240


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tggttaagaa attattttcg agtgaagag ctaggcgtaa tcattacaga tagccatact 420
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<210> 362

<211> 412

<212> PRT

<213> Chlamydia

<400> 362

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Phe His Phe Ser Leu Ser Lys Ala Phe Phe Ala Thr Leu Phe Arg Glu
      35      40      45
Glu Leu Ser Ser Gly Leu Thr Pro Ala Leu Val Ser Ser Tyr Gln Val Ser
      50      55      60
Glu Asp Gly Arg Phe Tyr Arg Phe Cys Ile Arg Lys Asp Ala Lys Trp
      65      70      75      80
Ser Asp Gly Ser Leu Leu Leu Ala Glu Asp Val Ile Ala Ala Trp Glu
      85      90      95
His Thr Lys Gln Ala Gly Arg Tyr Ser Leu Leu Phe Glu Lys Leu Ser
      100      105      110
Phe Arg Ala Ser Ser Ser Glu Ile Leu Ile Glu Leu Lys Glu Pro
      115      120      125
Glu Pro Gln Leu Leu Ala Ile Leu Ala Ser Pro Phe Phe Ala Val Tyr
      130      135      140
Arg Pro Glu Asn Pro Phe Leu Ser Ser Gly Pro Phe Met Pro Lys Thr
      145      150      155      160
Tyr Val Gln Gly Gln Thr Leu Val Leu Gln Lys Asn Pro Tyr Tyr Tyr
      165      170      175
Asp His Ala His Val Glu Leu His Ser Ile Asp Phe Arg Ile Ile Pro
      180      185      190
Asn Ile Tyr Thr Ala Leu His Leu Leu Arg Arg Gly Asp Val Asp Trp
      195      200      205
Val Gly Gln Pro Trp His Gln Gly Ile Pro Phe Glu Leu Arg Thr Thr
      210      215      220
Ser Ala Leu Tyr Thr His Tyr Pro Val Asp Gly Thr Phe Trp Leu Ile
      225      230      235      240
Leu Asn Pro Lys Asp Pro Val Leu Ser Ser Leu Ser Asn Arg Gln Arg
      245      250      255
Leu Ile Ala Ala Ile Gln Lys Glu Lys Leu Val Lys Gln Ala Leu Gly
      260      265      270      275
Thr Gln Tyr Arg Val Ala Glu Ser Ser Pro Ser Pro Glu Gly Ile Ile
      280      285      290
Ala His Gln Glu Ala Ser Thr Pro Phe Pro Gly Lys Ile Thr Leu Ile
      295      300      305
Tyr Pro Asn Asn Ile Thr Arg Cys Gln Arg Leu Ala Glu Val Leu Gln
      310      315      320
Glu Gln Cys Arg Asp Ala Gly Ile Gln Leu Thr Leu Glu Gly Leu Glu
      325      330      335
Tyr His Val Phe Val Gln Lys Arg Ala Thr Gln Asp Phe Ser Val Ser
      340      345      350
Thr Ala Thr Ser Ile Ala Phe His Pro Leu Ala Lys Ser Lys Phe Asp

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          355          360          365
Gln Thr Ala Leu Asp Asn Phe Thr Cys Leu Pro Leu Tyr His Ile Glu
 370          375          380
Tyr Asp Tyr Ile Leu Ser Arg Pro Leu Asp Gln Ile Val His Tyr Pro
385          390          395          400
Ser Gly Ser Val Asp Leu Thr Tyr Ala His Phe His
          405          410

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<210> 363
<211> 433
<212> PRT
<213> Chlamydia

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<400> 363
Met His His His His His His Met Tyr Val Arg Ser Ile Phe Phe Ser
          5          10          15
Ile Ile Ala Phe Leu Thr Val Gly Cys Ser Phe Ser Pro Pro Glu Ser
          20          25          30
Gly Leu Ile Ile Ala Ile His Asp Pro Arg Ser Leu Ser Pro Glu
          35          40          45
Lys Gly Glu Asn Ala Phe His Phe Ser Leu Ser Lys Ala Leu Phe Ala
          50          55          60
Thr Leu Phe Arg Glu Glu Leu Ser Gly Leu Thr Pro Ala Leu Val Ser
          65          70          75          80
Ser Tyr Gln Val Ser Glu Asp Gly Arg Phe Tyr Arg Phe Cys Ile Arg
          85          90          95
Lys Asp Ala Lys Trp Ser Asp Gly Ser Leu Leu Leu Ala Glu Asp Val
          100          105          110
Ile Ala Ala Trp Glu His Thr Lys Gln Ala Gly Arg Tyr Ser Leu Leu
          115          120          125
Phe Glu Lys Leu Ser Phe Arg Ala Ser Ser Ser Glu Ile Leu Ile
          130          135          140
Glu Leu Lys Glu Pro Glu Pro Gln Leu Leu Ala Ile Leu Ala Ser Pro
          145          150          155          160
Phe Phe Ala Val Tyr Arg Pro Glu Asn Pro Phe Leu Ser Ser Gly Pro
          165          170          175
Phe Met Pro Lys Thr Tyr Val Gln Gly Gln Thr Leu Val Leu Gln Lys
          180          185          190
Asn Pro Tyr Tyr Tyr Asp His Ala His Val Glu Leu His Ser Ile Asp
          195          200          205
Phe Arg Ile Ile Pro Asn Ile Tyr Thr Ala Leu His Leu Leu Arg Arg
          210          215          220
Gly Asp Val Asp Trp Val Gly Gln Pro Trp His Gln Gly Ile Pro Phe
          225          230          235          240
Glu Leu Arg Thr Thr Ser Ala Leu Tyr Thr His Tyr Pro Val Asp Gly
          245          250          255
Thr Phe Trp Leu Ile Leu Asn Pro Lys Asp Pro Val Leu Ser Ser Leu
          260          265          270
Ser Asn Arg Gln Arg Leu Ile Ala Ala Ile Gln Lys Glu Lys Leu Val
          275          280          285
Lys Gln Ala Leu Gly Thr Gln Tyr Arg Val Ala Glu Ser Ser Pro Ser
          290          295          300
Pro Glu Gly Ile Ile Ala His Gln Glu Ala Ser Thr Pro Phe Pro Gly
          305          310          315          320
Lys Ile Thr Leu Ile Tyr Pro Asn Asn Ile Thr Arg Cys Gln Arg Leu
          325          330          335
Ala Glu Val Leu Gln Glu Gln Cys Arg Asp Ala Gly Ile Gln Leu Thr
          340          345          350
Leu Glu Gly Leu Glu Tyr His Val Phe Val Gln Lys Arg Ala Thr Gln
          355          360          365

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Asp Phe Ser Val Ser Thr Ala Thr Ser Ile Ala Phe His Pro Leu Ala
 370 375 380
 Lys Ser Lys Phe Asp Gln Thr Ala Leu Asp Asn Phe Thr Cys Leu Pro
 385 390 395 400
 Leu Tyr His Ile Glu Tyr Asp Tyr Ile Leu Ser Arg Pro Leu Asp Gln
 405 410 415
 Ile Val His Tyr Pro Ser Gly Ser Val Asp Leu Thr Tyr Ala His Phe
 420 425 430
 His

<210> 364
 <211> 264
 <212> PRT
 <213> Chlamydia

<400> 364
 Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn Thr Gln Asn Cys Val Phe
 5 10 15
 Ala Asp Asn Ile Lys Val Gly Gln Met Thr Glu Pro Leu Lys Asp Gln
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 Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro Val Ala Ala Lys Met Thr
 35 40 45
 Ala Ser Asp Gly Ile Ser Leu Thr Val Ser Asn Asn Pro Ser Thr Asn
 50 55 60
 Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu Lys Ala Tyr Gln Leu Ile
 65 70 75 80
 Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly Gly Ile Ala Asp Thr Ile
 85 90 95
 Val Asp Ser Thr Val Gln Asp Ile Leu Asp Lys Ile Thr Thr Asp Pro
 100 105 110
 Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn Phe Pro Ile Thr Asn Lys
 115 120 125
 Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg Asn Ile Glu Thr Leu Leu
 130 135 140
 Gly Gly Thr Glu Ile Gly Lys Phe Thr Val Thr Pro Lys Ser Ser Gly
 145 150 155 160
 Ser Met Phe Leu Val Ser Ala Asp Ile Ile Ala Ser Arg Met Glu Gly
 165 170 175
 Gly Val Val Leu Ala Leu Val Arg Glu Gly Asp Ser Lys Pro Tyr Ala
 180 185 190
 Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro Asn Leu Cys Ser Leu Arg
 195 200 205
 Thr Arg Ile Ile Asn Thr Gly Leu Thr Pro Thr Tyr Ser Leu Arg
 210 215 220
 Val Gly Gly Leu Glu Ser Gly Val Val Trp Val Asn Ala Leu Ser Asn
 225 230 235 240
 Gly Asn Asp Ile Leu Gly Ile Thr Asn Thr Ser Asn Val Ser Phe Leu
 245 250 255
 Glu Val Ile Pro Gln Thr Asn Ala
 260

<210> 365
 <211> 249
 <212> PRT
 <213> Chlamydia

<400> 365
 Met His His His His His Lys Ile Thr Pro Ile Lys Thr Arg Lys
 5 10 15

Val Phe Ala His Asp Ser Leu Gln Glu Ile Leu Gln Glu Ala Leu Pro
 20 25 30
 Pro Leu Gln Glu Arg Ser Val Val Val Val Ser Ser Lys Ile Val Ser
 35 40 45
 Leu Cys Glu Gly Ala Val Ala Asp Ala Arg Met Cys Lys Ala Glu Leu
 50 55 60
 Ile Lys Lys Glu Ala Asp Ala Tyr Leu Phe Cys Glu Lys Ser Gly Ile
 65 70 75 80
 Tyr Leu Thr Lys Lys Glu Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp
 85 90 95
 Glu Ser Asn Thr Asp Gln Pro Phe Val Leu Tyr Pro Lys Asp Ile Leu
 100 105 110
 Gly Ser Cys Asn Arg Ile Gly Glu Trp Leu Arg Asn Tyr Phe Arg Val
 115 120 125
 Lys Glu Leu Gly Val Ile Ile Thr Asp Ser His Thr Thr Pro Met Arg
 130 135 140
 Arg Gly Val Leu Gly Ile Gly Leu Cys Trp Tyr Gly Phe Ser Pro Leu
 145 150 155 160
 His Asn Tyr Ile Gly Ser Leu Asp Cys Phe Gly Arg Pro Leu Gln Met
 165 170 175
 Thr Gln Ser Asn Leu Val Asp Ala Leu Ala Val Ala Val Val Cys
 180 185 190
 Met Gly Glu Gly Asn Glu Gln Thr Pro Leu Ala Val Ile Glu Gln Ala
 195 200 205
 Pro Asn Met Val Tyr His Ser Tyr Pro Thr Ser Arg Glu Glu Tyr Cys
 210 215 220
 Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu Tyr Gly Pro Phe Leu Gln
 225 230 235 240
 Ala Val Thr Trp Ser Gln Glu Lys Lys
 245

<210> 366

<211> 2418

<212> DNA

<213> Chlamydia pneumoniae

<400> 366

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 ctagtctatg aggtttaga caacagcatt gacgaagcca tggcaggtta ttgctctagg 180
 attgatgttc gcatttttaga ggacgggggt attgtcatcg tagataatgg ccgaggaatc 240
 cctatagaag ttcaacgaag agagtctgca aaacaaggta gagaggtctc tgctttagaa 300
 gtgggtttta cagtctctca tgctggagga aaatcgata aggatagcta taaagtatcc 360
 ggaggcttgc acggagttgg ggtttcttgc gttaatgtc attcggagaa attagtggc 420
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 ccattgcagt atgtaagtgt tagtgatcgg cagggaaacg aaatcgtttt ctaccctct 540
 cctaaaaaat ttctgacttg taactttgat cgctctatct taatgaaacg ctgcgagag 600
 cttgctttct taaatcgtgg gatcacata gtctttgaag atgacgcaga tgttagcttt 660
 gacaagggtta ccttctttta tgaggagggt attcaatctt ttgtaagtta cctgaatcaa 720
 aataaagaaa gccttttctc tgaaccgatt tatattttgt gaactcgagt aggagatgat 780
 ggagaatcgg agtttgaagc agccttacaa tggaaattcag ggtattctga actgttttat 840
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 gcgcttacta gggtaataca tacgtatatt aaagctcata accttcgcaa gaataataag 960
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 gtggctcaac aggtttaggg ggaagctctg acaatctttt ttgaagagaa tctctcaaat 1140
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 ctgcgagaa tgactttaag gaaaagtgtc tttagatcgg cacgcctacc tggaaaacta 1260
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 gctggaggat ctgcgaaaac aggtagagat cgaagatttc aagcaattct gcctatttca 1380

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gaaactcata  agttttaaatt  catagagctt  tataaagttg  ctgtgttcgt  agatattcaa  2040
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aataatttag  atatttag  2418

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<210> 367
 <211> 888
 <212> DNA
 <213> Chlamydia pneumoniae

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<400> 367
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ttgacgggaa  ggtattataa  atatgctgca  cgcttgtttt  ctgattttga  tgctccatat  180
ttattaggat  gccaaaaacg  cgctctctga  tggcttccaa  catcatcaaa  tcttctctat  240
tctaaaaagt  taacctcaga  ttattattgt  attttacaag  attgtatgga  ggggggcaag  300
gctctttttt  ccgttgaatc  aggagctcct  tacggggatc  actactatcg  cttttcacgc  360
actcctatag  ctcaagattt  acacgaatat  gtatgacctc  ggtactttcc  taatgctaag  420
gaaagagaga  tctctattga  aacgcgctct  ttaaaagacg  actatgcttt  tccagttttt  480
gctgcagcaa  aagtcttttg  actgcgagat  gaggtcatca  gaattcaaaa  ggagctggaa  540
cgccaagaag  cactgaactc  agtcgcgacg  atgacgttaa  tgcgtggccc  ctttgacttt  600
cgctatgcc  tcttgttttt  aacagataaa  agcgtctcta  aaggcaaaag  cttagatcgt  660
gttgtaacta  tactttatga  tggaaagaaa  ccctttgtca  tggcttcagg  agatgatgct  720
aatgatctcg  atctattgga  gagaggagat  tttaaaattg  tgatgagttc  cgcacctgaa  780
gagatgcacg  ttcatcgga  ctttctagct  cccccagcag  ataggatagg  cattctttca  840
gcttgggaag  ctggtgtccg  ctattatgac  gaccttatga  gctcttttag  888

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<210> 368
 <211> 237
 <212> DNA
 <213> Chlamydia pneumoniae

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<400> 368
atgaagaagt  ttttagccta  tatcattaag  aatctagtgg  accgcccctg  agaagtcctg  60
attaaagaag  ttacagggag  tcacacgatt  atttatgaac  taagtgtagc  taaacctgat  120
atcggaaga  ctattggcaa  agaagccgct  acgatcaaa  cgattcgtac  tctctgtggt  180
tctgtagcaa  gcaggaacaa  tgtaagggtc  agtttagaaa  ttatggaaga  aaagtag  237

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<210> 369
 <211> 1437
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 369

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tggaactttat	tctctatgga	cgacgggaaa	atgcataaag	ttgccaatat	tcgacgaaga	180
actatggcttc	tccatcccca	tggcgatgcc	cctattgttg	aagctcttgt	tgctcttagca	240
aataaaggctc	acctcatcga	cacgcaagga	aacttcggaa	atccccctac	ggagatcctc	300
cacgctgtcgt	cccggttatat	agaagcacga	ctcagtcctt	tagctcgaga	aacgctctttt	360
aatacgcagct	tgatgacttt	tcagtactct	tatgatggaa	gagaaaaaga	acctgatatt	420
ttacctgcaa	agctccccgt	gcttttaactt	catgggtgtgg	acgggattgc	tgtggggaag	480
accacgaaaa	tttttccctca	caattttgca	gaacttttga	aagcgcaaat	tgcaatttta	540
aatgataaaa	aatttcaactg	gtttcctgac	tttccctcgg	gaggattgat	ggatccctcg	600
gagtatcaag	atggattggg	atcgattaca	ctgcgtgcat	ctatagacat	tattaatgat	660
aaaacgcttg	tagtgaaaca	aattttgtcct	caatctacga	ctgagacttt	gatccgttct	720
atagagaacg	cagcaaaaacg	tggcacaatt	aaaatcgata	ccatccaaga	cttctctaca	780
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gagataaagc	ctgtagaatg	ttcgatatcc	gagatttcta	aactgcatac	tacagctcta	960
cagggggtatc	ttgaaaaaga	acttttgttg	ctccaagaac	aacttacttt	ggaccattat	1020
cataaaacct	tagaatacat	ctttattaaa	cataagctct	atgattctgt	ccgagaagtc	1080
ctagccataa	acaagaaaaat	ttctgtctgat	gacctacatc	aagcagtgct	ccatgctctg	1140
gagccctggc	ttcatgagct	tgcaactccc	gttacaiaac	aagacacctc	tcaacttgct	1200
tcactacaag	taagaaaaat	ccctttgcttt	aatgaagagc	catgcactaa	ggaactgcta	1260
gccatagaaa	aaaaaacacg	agcgatataca	aaagattctg	gaagaataaa	agaaagcacc	1320
gtcaagtacc	tcaaaggagc	tttagaacgc	catggacact	taggagagag	aaataacacag	1380
atcacaaact	ttaagacggc	aaagacatct	atcttgaaac	aacaaacactt	aattttaa	1437

<210> 370

<211> 774

<212> DNA

<213> Chlamydia pneumoniae

<400> 370

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cggttctctc	tttggtaaac	acttctctgag	gttgaagatg	ttcggttctct	atgccaaagag	120
acgagggtttg	atgggtttttt	atattttaag	ccctcttctct	gtgctgatgc	gcaactcatt	180
atttttaatt	ccgatggatc	acgtccaacg	atgtgtggta	acggcttgcg	ttgtgcaatt	240
gctcacttag	cttctcagaa	gggaaaatcg	gacatctctg	tatctacgga	tacttggtcta	300
tattcaggat	attttttatc	ttgggatcgt	gtgctttag	atatgactct	cgcagattgg	360
agagcttctg	ttcatcgatt	ggagtcgcgt	cotgatctct	ttcccaaaag	ggctcgtttgt	420
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aaattttgttc	agatactcgg	acattgccag	ttgcgcgttc	gtactacaga	acgtggagct	600
gaaggggaaa	ctgcagcttg	tggaaacagg	gctctagctt	gtgctctgtg	ttgttcaaac	660
tcctatggat	ggaagagatc	gatccaaatc	catacttggg	gtggagagct	tatgactgtg	720
agtcaaaata	ggggacgggt	atatctttag	ggctctgtaa	ctagagattt	ataa	774

<210> 371

<211> 576

<212> DNA

<213> Chlamydia pneumoniae

<400> 371

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ctttgtgtatt	tggaaattaaa	agatctctgga	aagcctatag	tttttggatt	caatagctct	180
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acaaaagctc	gcattataga	tgtctatgta	gaggcgacaa	atcaacctcg	agatatcata	480
gaaaaggcta	tcgatagaga	tatgtggatg	agaccacaac	aagctaagga	tttttggttta	540
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<210> 372
 <211> 699
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 372
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 gaaagcagtc aaatcaaa gaattattgaa gctctaagtt ctgcttttaa taaggccaaa 600
 cctcctcgag cttaaaggta atatttagtc tcatcacta tttcttccac tatggggcct 660
 ggtatttcta tagatactag agaattaatg gcattctaa 699

<210> 373
 <211> 369
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 373
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 aatcagaat ataccgtaga aggggatttg cgacgtcgtg ttcaatcgga tatcaaaaga 240
 ttgatcgcca tccattctta tcgaggtcag agacatagac tttctttacc agtaagagga 300
 caacgtacaa aaactaatc tcgtactcga aaagtgaaaa gaaaaacagt cgcaggttaag 360
 aagaataaa 369

<210> 374
 <211> 5172
 <212> DNA
 <213> Chlamydia pneumoniae

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 tctctaaccg gatcctcaaa cctacactcc gattttgatt ttacaaaaga tagcgtgtta 360
 gacctctatc acctttttct tccttcagct tcaaatatct tcaattctgc acctctttct 420
 tccagttagc cgggtggatc ctcgagcagc atcatctctg aagtgcattct 480
 gctgtgtgtg ctgcggaccc aaaaggaggg gctgcctttt atagtaacga ggctaaacga 540
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<210> 377

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 377

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<210> 378

<211> 1671

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 378

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<210> 379

<211> 1386

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 379

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<210> 380

<211> 1635

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 380

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<210> 381

<211> 1995

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 381

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<210> 382
<211> 987
<212> DNA
<213> Chlamydia pneumoniae

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<210> 383
<211> 654
<212> DNA
<213> Chlamydia pneumoniae

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<210> 384

<211> 813

<212> DNA

<213> Chlamydia pneumoniae

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<210> 385

<211> 1956

<212> DNA

<213> Chlamydia pneumoniae

<400> 385

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<210> 386

<211> 805

<212> PRT

<213> Chlamydia pneumoniae

<400> 386

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```

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val Arg
                    50                                55                    60

```

```

Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
                    65                                70                    75                    80

```

```

Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
                    85                                90                    95

```

```

Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
                    100                               105                    110

```

```

Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
                    115                               120                    125

```

```

Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
                    130                               135                    140

```

```

Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
                    145                               150                    155                    160

```

```

Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
                    165                               170                    175

```

```

Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
                    180                               185                    190

```

```

Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
                    195                               200                    205

```

```

Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr

```


210		215		220
Phe Phe Tyr Glu Gly	Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln			
225	230	235		240
Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg				
	245	250		255
Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn				
	260	265		270
Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr				
	275	280		285
Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg				
	290	295		300
Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys				
	305	310		315
Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile				
	325	330		335
Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys				
	340	345		350
Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu				
	355	360		365
Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile				
	370	375		380
Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys				
	385	390		395
Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu				
	405	410		415
Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu				
	420	425		430
Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly				
	435	440		445
Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu				
	450	455		460
Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile				
	465	470		475
Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe				
	485	490		495
Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala				
	500	505		510
Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr				
	515	520		525
Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln				
	530	535		540

Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 545 550 555 560
 Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu
 565 570 575
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 580 585 590
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 595 600 605
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 610 615 620
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 625 630 635 640
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Ala
 645 650 655
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 660 665 670
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 675 680 685
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 690 695 700
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 705 710 715 720
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 725 730 735
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 740 745 750
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 755 760 765
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 770 775 780
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 785 790 795 800
 Asn Asn Leu Asp Ile
 805

<210> 387

<211> 295

<212> PRT

<213> Chlamydia pneumoniae

<400> 387

Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr His Gln
 5 10 15

Ser His His Leu Asp Lys Lys Val Tyr Glu Arg Leu Tyr Ala Leu His
 20 25 30
 Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly Arg Tyr Tyr Lys Tyr
 35 40 45
 Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro Tyr Leu Leu Gly Cys
 50 55 60
 Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser Ser Asn Leu Leu Tyr
 65 70 75 80
 Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile Leu Gln Asp Cys Met
 85 90 95
 Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser Gly Ala Pro Tyr Gly
 100 105 110
 Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile Ala Gln Asp Leu His
 115 120 125
 Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala Lys Glu Arg Glu Ile
 130 135 140
 Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr Ala Phe Pro Ser Phe
 145 150 155 160
 Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu Val Ile Arg Ile Gln
 165 170 175
 Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser Val Ala Thr Met Thr
 180 185 190
 Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala Ile Leu Phe Leu Thr
 195 200 205
 Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp Arg Val Val Asn Ile
 210 215 220
 Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala Ser Gly Asp Asp Ala
 225 230 235 240
 Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe Lys Ile Val Met Ser
 245 250 255
 Ser Ala Pro Glu Glu Met His Val His Ala Asp Phe Leu Ala Pro Pro
 260 265 270
 Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu Ala Gly Val Arg Tyr
 275 280 285
 Tyr Asp Asp Leu Met Ser Leu
 290 295

<210> 388

<211> 78

<212> PRT

<213> Chlamydia pneumoniae

<400> 388

Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu Val Asp Arg Pro
 5 10 15

Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His Thr Ile Ile Tyr
 20 25 30

Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile Ile Gly Lys Glu
 35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
 50 55 60

Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu Glu Lys
 65 70 75

<210> 389

<211> 478

<212> PRT

<213> Chlamydia pneumoniae

<400> 389

Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr Ala
 5 10 15

Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly Leu
 20 25 30

Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp Asp
 35 40 45

Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
 50 55 60

His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala
 65 70 75 80

Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro Leu
 85 90 95

Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser
 100 105 110

Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe His
 115 120 125

Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala Lys
 130 135 140

Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met
 145 150 155 160

Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala Gln
 165 170 175

Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe Pro
 180 185 190

Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly Ser
 195 200 205

Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu Val
 210 215 220
 Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg Ser
 225 230 235 240
 Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile Gln
 245 250 255
 Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys Gly
 260 265 270
 Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu Cys
 275 280 285
 Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys Pro
 290 295 300
 Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala Leu
 305 310 315 320
 Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Leu Gln Glu Gln Leu Thr
 325 330 335
 Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His Lys
 340 345 350
 Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile Ser
 355 360 365
 Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp Leu
 370 375 380
 His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu Ala
 385 390 395 400
 Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys Thr
 405 410 415
 Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys Asp
 420 425 430
 Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu Leu
 435 440 445
 Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn Phe
 450 455 460
 Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
 465 470 475

<210> 390

<211> 257

<212> PRT

<213> Chlamydia pneumoniae

<400> 390

Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr Phe Ile Tyr Ser
 5 10 15

Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu Pro Glu Val Glu
 20 25 30
 Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp Gly Phe Leu Tyr
 35 40 45
 Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile Ile Phe Asn Ser
 50 55 60
 Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu Arg Cys Ala Ile
 65 70 75 80
 Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile Ser Val Ser Thr
 85 90 95
 Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp Asp Arg Val Leu
 100 105 110
 Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val His Arg Leu Glu
 115 120 125
 Ser Arg Pro Asp Pro Leu Pro Lys Glu Val Val Cys Ile His Thr Gly
 130 135 140
 Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser Thr Leu Asp Leu
 145 150 155 160
 Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr Phe Ser Pro Asp
 165 170 175
 Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His Cys Gln Leu Arg
 180 185 190
 Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr Ala Ala Cys Gly
 195 200 205
 Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn Ser Tyr Gly Trp
 210 215 220
 Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu Leu Met Thr Val
 225 230 235 240
 Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser Val Thr Arg Asp
 245 250 255
 Leu

<210> 391
 <211> 191
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 391
 Met Ala Asp Gly Glu Val His Lys Leu Arg Asp Ile Ile Glu Lys Glu
 5 10 15
 Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu Pro Val Thr Glu Lys
 20 25 30

Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Lys Asp
 35 40 45
 Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser Val
 50 55 60
 Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Leu Thr Ser Pro
 65 70 75 80
 Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val Leu
 85 90 95
 Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala Thr Pro His Ser Arg
 100 105 110
 Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro Ile Thr Gly Gln Ala
 115 120 125
 Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala Arg
 130 135 140
 Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln Pro Arg Asp Ile Ile
 145 150 155 160
 Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr Ala Asn Glu Ala Lys
 165 170 175
 Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu
 180 185 190

 <210> 392
 <211> 232
 <212> PRT
 <213> Chlamydia pneumoniae

 <400> 392
 Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
 5 10 15
 Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
 35 40 45
 Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
 50 55 60
 Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
 65 70 75 80
 Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
 130 135 140
 Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
 165 170 175
 Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu
 180 185 190
 Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
 210 215 220
 Asp Thr Arg Glu Leu Met Ala Ser
 225 230

<210> 393
 <211> 122
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 393
 Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 5 10 15
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu
 20 25 30
 Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
 50 55 60
 Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
 115 120

<210> 394
 <211> 1723
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 394
 Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala

5					10					15					
Leu	Thr	Ala	Phe	Gly	Asp	Pro	Ala	Ser	Val	Glu	Ile	Ser	Thr	Ser	His
			20					25					30		
Thr	Gly	Ser	Gly	Asp	Pro	Thr	Ser	Asp	Ala	Ala	Leu	Thr	Gly	Phe	Thr
		35					40						45		
Gln	Ser	Ser	Thr	Glu	Thr	Asp	Gly	Thr	Thr	Tyr	Thr	Ile	Val	Gly	Asp
	50					55					60				
Ile	Thr	Phe	Ser	Thr	Phe	Thr	Asn	Ile	Pro	Val	Pro	Val	Val	Thr	Pro
	65					70				75				80	
Asp	Ala	Asn	Asp	Ser	Ser	Ser	Asn	Ser	Ser	Lys	Gly	Gly	Ser	Ser	Ser
			85						90				95		
Ser	Gly	Ala	Thr	Ser	Leu	Ile	Arg	Ser	Ser	Asn	Leu	His	Ser	Asp	Phe
			100					105					110		
Asp	Phe	Thr	Lys	Asp	Ser	Val	Leu	Asp	Leu	Tyr	His	Leu	Phe	Phe	Pro
		115					120					125			
Ser	Ala	Ser	Asn	Thr	Leu	Asn	Pro	Ala	Leu	Leu	Ser	Ser	Ser	Ser	Ser
	130					135					140				
Gly	Gly	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Gly	Ser	Ala	Ser
	145					150				155				160	
Ala	Val	Val	Ala	Ala	Asp	Pro	Lys	Gly	Gly	Ala	Ala	Phe	Tyr	Ser	Asn
			165					170					175		
Glu	Ala	Asn	Gly	Thr	Leu	Thr	Phe	Thr	Thr	Asp	Ser	Gly	Asn	Pro	Gly
			180					185					190		
Ser	Leu	Thr	Leu	Gln	Asn	Leu	Lys	Met	Thr	Gly	Asp	Gly	Ala	Ala	Ile
			195				200					205			
Tyr	Ser	Lys	Gly	Pro	Leu	Val	Phe	Thr	Gly	Leu	Lys	Asn	Leu	Thr	Phe
	210					215					220				
Thr	Gly	Asn	Glu	Ser	Gln	Lys	Ser	Gly	Gly	Ala	Ala	Tyr	Thr	Glu	Gly
	225					230				235				240	
Ala	Leu	Thr	Thr	Gln	Ala	Ile	Val	Glu	Ala	Val	Thr	Phe	Thr	Gly	Asn
			245					250					255		
Thr	Ser	Ala	Gly	Gln	Gly	Gly	Ala	Ile	Tyr	Val	Lys	Glu	Ala	Thr	Leu
			260					265					270		
Phe	Asn	Ala	Leu	Asp	Ser	Leu	Lys	Phe	Glu	Lys	Asn	Thr	Ser	Gly	Gln
		275					280					285			
Ala	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Ser	Thr	Leu	Thr	Ile	Ser	Asn	Ile
	290					295					300				
Thr	Lys	Ser	Ile	Glu	Phe	Ile	Ser	Asn	Lys	Ala	Ser	Val	Pro	Ala	Pro
	305					310				315				320	
Ala	Pro	Glu	Pro	Thr	Ser	Pro	Ala	Pro	Ser	Ser	Leu	Ile	Asn	Ser	Thr
			325					330					335		

Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala Ala Ser Ala Thr Pro
 340 345 350
 Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr Pro Ile Ser Thr Gln
 355 360 365
 Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala Lys Gln Gly Ile Ser
 370 375 380
 Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser Asn Ser Ala Ser Val
 385 390 395
 Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile Gly Glu Ser Gly Gly
 405 410 415
 Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln Gln Cys Thr Gly Thr
 420 425 430
 Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser Gly Gly Gly Ile Tyr
 435 440 445
 Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala Asn Leu Lys Met Thr
 450 455 460
 Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile Tyr Thr Lys Lys Ala
 465 470 475
 Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr Phe Ser Gly Asn Thr
 485 490 495
 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
 500 505 510
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
 515 520 525
 Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr Ala Pro Val Val Ser
 530 535 540
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala Ala
 545 550 555 560
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
 565 570 575
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 580 585 590
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
 595 600 605
 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu
 610 615 620
 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr
 625 630 635 640
 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
 645 650 655

Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser
 660 665 670
 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Glu Ala Asn
 675 680 685
 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn
 690 695 700
 Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr
 705 710 715 720
 Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala
 725 730 735
 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
 740 745 750
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp
 755 760 765
 Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala
 770 775 780
 Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg
 785 790 795 800
 Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly
 805 810 815
 Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser
 820 825 830
 Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys
 835 840 845
 Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn
 850 855 860
 Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly
 865 870 875 880
 Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe
 885 890 895
 Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala
 900 905 910
 Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn
 915 920 925
 Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys
 930 935 940
 Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala
 945 950 955 960
 Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn
 965 970 975
 Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp

	980		985		990
Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn	995		1000		1005
Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile	1010		1015		1020
Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile	1025		1030		1035
Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg	1045		1050		1055
Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala	1060		1065		1070
Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys	1075		1080		1085
Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn	1090		1095		1100
Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn	1105		1110		1115
Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Val Thr Ile	1125		1130		1135
Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys	1140		1145		1150
Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr	1155		1160		1165
Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val	1170		1175		1180
Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu	1185		1190		1195
Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu	1205		1210		1215
Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu	1220		1225		1230
Ile Leu Gly Lys Asn Ala Glu Leu Ser Val Val Ser Phe Thr Gln Ser	1235		1240		1245
Pro Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His	1250		1255		1260
Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe	1265		1270		1275
Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr	1285		1290		1295
Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp	1300		1305		1310

Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln
 1315 1320 1325
 Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp
 1330 1335 1340
 Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly
 1345 1350 1355 1360
 Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro
 1365 1370 1375
 Asn Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr
 1380 1385 1390
 Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser
 1395 1400 1405
 Ile Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu
 1410 1415 1420
 Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn
 1425 1430 1435 1440
 Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg
 1445 1450 1455
 Asn Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val
 1460 1465 1470
 Asp Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln
 1475 1480 1485
 Val Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His
 1490 1495 1500
 Lys Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile
 1505 1510 1515 1520
 Phe Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val
 1525 1530 1535
 Ala Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Tyr Tyr Pro Ser
 1540 1545 1550
 Ile Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe
 1555 1560 1565
 Asp Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr
 1570 1575 1580
 Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln
 1585 1590 1595 1600
 Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys
 1605 1610 1615
 Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala
 1620 1625 1630

Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr
 1635 1640 1645
 Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu
 1650 1655 1660
 Ser Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn
 1665 1670 1675 1680
 Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp
 1685 1690 1695
 Thr Leu Tyr Gly Thr Thr Thr Ile Asp Ala Ser Met Asn Thr Leu Val
 1700 1705 1710
 Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1715 1720

<210> 395
 <211> 1723
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 395
 Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala
 1 5 10 15
 Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu Ile Ser Thr Ser His
 20 25 30
 Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala Leu Thr Gly Phe Thr
 35 40 45
 Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr Thr Ile Val Gly Asp
 50 55 60
 Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val Pro Val Val Thr Pro
 65 70 75 80
 Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys Gly Gly Ser Ser Ser
 85 90 95
 Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn Leu His Ser Asp Phe
 100 105 110
 Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr His Leu Phe Phe Pro
 115 120 125
 Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu Ser Ser Ser Ser Ser
 130 135 140
 Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Gly Ser Ala Ser
 145 150 155 160
 Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala Ala Phe Tyr Ser Asn
 165 170 175
 Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp Ser Gly Asn Pro Gly
 180 185 190
 Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly Asp Gly Ala Ala Ile
 195 200 205
 Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu Lys Asn Leu Thr Phe
 210 215 220
 Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala Ala Tyr Thr Glu Gly
 225 230 235 240
 Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val Thr Phe Thr Gly Asn
 245 250 255
 Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val Lys Glu Ala Thr Leu
 260 265 270
 Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys Asn Thr Ser Gly Gln
 275 280 285

Ala Gly Gly Gly Ile Tyr Thr Glu Ser Thr Leu Thr Ile Ser Asn Ile
 290 295
 Thr Lys Ser Ile Glu Phe Ile Ser Asn Lys Ala Ser Val Pro Ala Pro
 305 310 315 320
 Ala Pro Glu Pro Thr Ser Pro Ala Pro Ser Ser Leu Ile Asn Ser Thr
 325 330 335
 Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala Ala Ser Ala Thr Pro
 340 345 350
 Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr Pro Ile Ser Thr Gln
 355 360 365
 Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala Lys Gln Gly Ile Ser
 370 375 380
 Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser Asn Ser Ala Ser Val
 385 390 395 400
 Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile Gly Glu Ser Gly Gly
 405 410 415
 Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln Gln Cys Thr Gly Thr
 420 425 430
 Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser Gly Gly Ile Tyr
 435 440 445
 Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala Asn Leu Lys Met Thr
 450 455 460
 Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile Tyr Thr Lys Lys Ala
 465 470 475 480
 Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr Phe Ser Gly Asn Thr
 485 490 495
 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
 500 505 510
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
 515 520 525
 Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr Ala Pro Val Val Ser
 530 535 540
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala
 545 550 555 560
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
 565 570 575
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 580 585 590
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
 595 600 605
 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu
 610 615 620
 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr
 625 630 635 640
 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
 645 650 655
 Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser
 660 665 670
 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn
 675 680 685
 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn
 690 695 700
 Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr
 705 710 715 720
 Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala
 725 730 735
 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
 740 745 750
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp
 755 760 765
 Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala

770	775	780
Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg		
785	790	795
Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly		
	805	810
Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser		
	820	825
Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys		
	835	840
Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn		
	850	855
Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly		
	865	870
Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe		
	885	890
Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala		
	900	905
Asp Ile Gln Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn		
	915	920
Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys		
	930	935
Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala		
	945	950
Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn		
	965	970
Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp		
	980	985
Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn		
	995	1000
Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile		
	1010	1015
Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile		
	1025	1030
Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg		
	1045	1050
Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala		
	1060	1065
Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys		
	1075	1080
Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn		
	1090	1095
Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn		
	1105	1110
Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Ile Thr Ile		
	1125	1130
Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys		
	1140	1145
Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr		
	1155	1160
Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Thr Asp Ala Val		
	1170	1175
Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu		
	1185	1190
Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu		
	1205	1210
Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu		
	1220	1225
Ile Leu Gly Lys Asn Ala Glu Leu Ser Val Val Ser Phe Thr Gln Ser		
	1235	1240
Pro Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His		
	1250	1255
		1260

Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe
 1265 1270 1275 1280
 Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr
 1285 1290 1295
 Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp
 1300 1305 1310
 Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln
 1315 1320 1325
 Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp
 1330 1335 1340
 Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly
 1345 1350 1355 1360
 Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro
 1365 1370 1375
 Asn Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr
 1380 1385 1390
 Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser
 1395 1400 1405
 Ile Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu
 1410 1415 1420
 Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn
 1425 1430 1435 1440
 Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg
 1445 1450 1455
 Asn Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val
 1460 1465 1470
 Asp Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln
 1475 1480 1485
 Val Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His
 1490 1495 1500
 Lys Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile
 1505 1510 1515 1520
 Phe Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val
 1525 1530 1535
 Ala Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Tyr Tyr Pro Ser
 1540 1545 1550
 Ile Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe
 1555 1560 1565
 Asp Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr
 1570 1575 1580
 Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln
 1585 1590 1595 1600
 Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys
 1605 1610 1615
 Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala
 1620 1625 1630
 Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr
 1635 1640 1645
 Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu
 1650 1655 1660
 Ser Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn
 1665 1670 1675 1680
 Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp
 1685 1690 1695
 Thr Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val
 1700 1705 1710
 Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1715 1720

<211> 1252

<212> PRT

<213> Chlamydia pneumoniae

<400> 396

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Met Leu Lys Cys   5 Glu Arg Val Ser   Val Lys Lys Lys Glu Asp Ile
                               10                               15

Pro Asp Leu Pro Asn Leu Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln
                20                               25               30

Phe Leu Gln Ile Gly Lys Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu
                35                               40               45

Glu Glu Val Phe Arg Glu Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala
                50                               55               60

Thr Val Leu Glu Tyr   Leu Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser
                65                               70               75               80

Pro Glu Glu Cys   Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys
                85                               90               95

Val Arg Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val
                100                              105              110

Tyr Met Gly Thr Ile Pro Leu Met Thr Asp Lys Gly Thr Phe Ile Ile
                115                              120              125

Asn Gly Ala Glu Arg Val Val Val Ser Gln Val His Arg Ser Pro Gly
                130                              135              140

Ile Asn Phe Glu Gln Glu Lys His Ser Lys Gly Asn Ile Leu Phe Ser
                145                              150              155              160

Phe Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp
                165                              170              175

Ile Asn Asp Leu Ile Tyr Ile His Ile Asp Arg Lys Lys Arg Arg Arg
                180                              185              190

Lys Ile Leu Ala Ile Thr Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp
                195                              200              205

Ala Asp Ile Ile Glu Glu Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg
                210                              215              220

Ser Glu Lys Asp Phe Ala Leu Leu Val Gly Arg Ile Leu Ala Asp Asn
                225                              230              235              240

Ile Ile Asp Glu Ala Ser Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys
                245                              250              255

Leu Ser Thr Ala Met Leu Lys Arg Met Leu Asp Ala Gly Ile Ala Ser
                260                              265              270

Val Lys Ile Ala Val Asp Ala Asp Glu Asn His Pro Ile Ile Lys Met
                275                              280              285

Leu Ala Lys Asp Pro Thr Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe
                290                              295              300

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Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg
 305 310 315 320
 Ser Thr Ile Met Arg Leu Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp
 340 345 350
 Asp Glu Ala Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Lys Met Gly Asp Glu Lys Ala Cys
 370 375 380
 Val Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395
 Glu Leu Ile Gln Asn Gln Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Val Val Ser Ala Lys Gly Leu Ala Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Gly Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Ile Val Arg Asp Gly Ile Val
 530 535 540
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val
 545 550 555 560
 Ile Ala Gln Ala Ser Ala Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu
 565 570 575
 Pro Val Cys Trp Val Arg Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr
 580 585 590
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Ile
 595 600 605
 Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala
 610 615 620

Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr
 625 630 635 640
 Glu Ala Pro Val Val Gly Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp
 645 650 655
 Ser Gly Ala Ile Val Val Ala Glu Glu Asp Gly Val Val Asp Phe Val
 660 665 670
 Asp Gly Tyr Lys Val Val Val Ala Ala Lys His Asn Pro Thr Ile Lys
 675 680 685
 Arg Thr Tyr His Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys
 690 695 700
 Ile Asn Gln Gln Pro Leu Cys Ala Val Gly Asp Val Ile Thr Lys Gly
 705 710 715 720
 Asp Val Ile Ala Asp Gly Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu
 725 730 735
 Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe
 740 745 750
 Glu Asp Ala Ile Ile Ile Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr
 755 760 765
 Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys
 770 775 780
 Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Asp Glu
 785 790 795 800
 Val Leu Ala Asn Leu Gly Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu
 805 810 815
 Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu
 820 825 830
 Thr Glu Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu
 835 840 845
 Lys Ala Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr
 850 855 860
 Glu Gly Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu
 865 870 875 880
 Ser Lys Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp
 885 890 895
 Leu Gln Lys Gly Tyr Lys Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr
 900 905 910
 Arg Glu Lys Leu Gly Ala Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala
 915 920 925
 Ile Ile His Arg Arg Thr Ala Glu Ile Val Val His Glu Gly Leu Leu
 930 935 940
 Phe Asp Gln Glu Thr Ile Glu Arg Ile Glu Gln Glu Asp Leu Val Asp

[illegible]

<211> 224

<212> PRT

<213> Chlamydia pneumoniae

<400> 397

Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
 5 10 15

Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
 20 25 30

Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
 35 40 45

Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
 50 55 60

Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
 65 70 75 80

Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
 85 90 95

Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
 100 105 110

Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
 115 120 125

Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
 130 135 140

Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
 145 150 155 160

Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
 165 170 175

Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
 180 185 190

Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
 195 200 205

Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
 210 215 220

<210> 398

<211> 556

<212> PRT

<213> Chlamydia pneumoniae

<400> 398

Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
 5 10 15

Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
 20 25 30

Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro

35	40	45
Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg Asn Lys Gln		
50	55	60
Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr		
65	70	75
Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln Gln Glu Ser		
	85	90
Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp Cys Asn Val		
	100	105
Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr		
	115	120
Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val Asp Val Val		
	130	135
Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro		
	145	150
Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys Ile Asp Arg		
	165	170
Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu		
	180	185
Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu		
	195	200
Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln		
	210	215
Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile		
	225	230
Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp		
	245	250
Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu		
	260	265
Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr		
	275	280
Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr		
	290	295
Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val		
	305	310
Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser		
	325	330
Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly		
	340	345
Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly		
	355	360
		365

Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495
 Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu
 500 505 510
 Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala
 515 520 525
 Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr
 530 535 540
 Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
 545 550 555

 <210> 399
 <211> 461
 <212> PRT
 <213> Chlamydia pneumoniae

 <400> 399
 Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly
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 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu
 20 25 30
 Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
 35 40 45
 Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys
 50 55 60
 His Ala Glu Gln Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr
 65 70 75 80
 Pro Ala Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln
 85 90 95

Gly Leu Glu Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Leu Lys Gly
 100 105 110
 Thr Gly Ser Leu Val Ser Ser Thr Glu Val Lys Val Ile Gly Gln Asp
 115 120 125
 Thr Thr Ile Ile Lys Ala Asn His Ile Ile Leu Ala Thr Gly Ser Glu
 130 135 140
 Pro Arg Pro Phe Pro Gly Val Pro Phe Ser Ser Arg Ile Leu Ser Ser
 145 150 155 160
 Thr Gly Ile Leu Glu Leu Glu Val Leu Pro Lys Lys Leu Ala Ile Ile
 165 170 175
 Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
 180 185 190
 Gly Val Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val
 195 200 205
 Asn Asn Lys Glu Val Ser Gln Thr Val Thr Asn Lys Phe Thr Lys Gln
 210 215 220
 Gly Ile Arg Ile Leu Thr Lys Ala Ser Ile Ser Ala Ile Glu Glu Ser
 225 230 235 240
 Gln Asn Gln Val Arg Ile Thr Val Asn Asp Gln Val Glu Glu Phe Asp
 245 250 255
 Tyr Val Leu Val Ala Ile Gly Arg Gln Phe Asn Thr Ala Ser Ile Gly
 260 265 270
 Leu Asp Asn Ala Gly Val Ile Arg Asp Asp Arg Gly Val Ile Pro Val
 275 280 285
 Asp Glu Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp
 290 295 300
 Ile Thr Gly Lys Trp Leu Leu Ala His Val Ala Ser His Gln Gly Val
 305 310 315 320
 Ile Ala Ala Lys Asn Ile Ser Gly His His Glu Val Met Asp Tyr Ser
 325 330 335
 Ala Ile Pro Ser Val Ile Phe Thr His Pro Glu Ile Ala Met Val Gly
 340 345 350
 Leu Ser Leu Gln Glu Ala Glu Gln Gln Asn Leu Pro Ala Lys Leu Thr
 355 360 365
 Lys Phe Pro Phe Lys Ala Ile Gly Lys Ala Val Ala Leu Gly Ala Ser
 370 375 380
 Asp Gly Phe Ala Ala Ile Val Ser His Glu Ile Thr Gln Gln Ile Leu
 385 390 395 400
 Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile Gly Glu Met
 405 410 415

Thr Leu Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr
420 425 430

Val His Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu
435 440 445

Leu Ala Thr Asn His Pro Leu His Phe Pro Pro Lys Ser
450 455 460

<210> 400

<211> 544

<212> PRT

<213> Chlamydia pneumoniae

<400> 400

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Lys Lys Ile
5 10 15

His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
20 25 30

Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
35 40 45

Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
50 55 60

Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
65 70 75 80

Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
85 90 95

Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
100 105 110

Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
115 120 125

Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
130 135 140

Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
145 150 155 160

Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
165 170 175

Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
180 185 190

Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
195 200 205

Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp
210 215 220

Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val
225 230 235 240

Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly
 245 250 255
 Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg
 260 265 270
 Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Glu Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu
 290 295 300
 Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
 305 310 315 320
 Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
 325 330 335
 Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
 340 345 350
 Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
 355 360 365
 Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
 370 375 380
 Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
 385 390 395 400
 His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
 405 410 415
 Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
 420 425 430
 Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
 435 440 445
 Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
 450 455 460
 Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
 465 470 475 480
 Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
 485 490 495
 Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
 500 505 510
 Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
 515 520 525
 Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
 530 535 540

<210> 401

<211> 664

<212> PRT

<213> Chlamydia pneumoniae

<400> 401

Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu Gly Ala
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Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala Ser Gln
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Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu Val Ile
35 40 45

Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile Trp His
50 55 60

Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe Arg Val
65 70 75 80

His Gly Pro Lys Lys His His Gly Met Gln Tyr Ser Phe Lys Glu Tyr Leu
85 90 95

Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe Gly Ser
100 105 110

Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu Glu Pro
115 120 125

Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu Glu Met
130 135 140

Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser Ser Ser
145 150 155 160

Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp
165 170 175

His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro Ile Phe
180 185 190

Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe Pro Tyr
195 200 205

Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser Pro Cys
210 215 220

Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg Glu Phe
225 230 235 240

Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val Ile Leu
245 250 255

Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys Ser Leu
260 265 270

Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln Gly His
275 280 285

Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn Arg Ala
290 295 300

Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val Glu Glu

305		310		315		320
Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe Ser Arg						
		325		330		335
Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu Ala Ile						
		340		345		350
Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu Pro Trp						
		355		360		365
Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu Ser Pro						
		370		375		380
Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys Ala Phe						
		385		390		395
Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg Ile Ser						
		405		410		415
Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser Ile Asn						
		420		425		430
Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val Thr Tyr						
		435		440		445
Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp Gly Thr						
		450		455		460
Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr Glu Asp						
		465		470		475
Pro Gly Ile Leu Glu Val Arg Glu Arg Gln Leu Arg Asn Phe Phe Leu						
		485		490		495
Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly Asp Glu						
		500		505		510
Tyr Ala His Thr Ala Glu Gly Asn Asn Arg Trp Ala Leu Asp Ser						
		515		520		525
Asn Ala Asn Tyr Phe Leu Trp Asp Gln Leu Thr Ala Lys Pro Thr Leu						
		530		535		540
Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr Lys Thr						
		545		550		555
Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp Val Asp						
		565		570		575
Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu Ala Phe						
		580		585		590
Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His Val Gly						
		595		600		605
Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn Phe Leu						
		610		615		620
Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro Gln Asn						
		625		630		635
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Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu Ile Ala
645 650 655

Ile Ser His Ala Lys Glu Val Thr
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<210> 402

<211> 328

<212> PRT

<213> Chlamydia pneumoniae

<400> 402

Met Ala Phe Lys Glu Val Val Arg Val Ala Val Thr Gly Gly Lys Gly
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Gln Ile Ala Tyr Asn Phe Leu Phe Ala Leu Ala His Gly Asp Val Phe
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Gly Val Asp Arg Gly Val Asp Leu Arg Ile Tyr Asp Val Pro Gly Thr
35 40 45

Glu Arg Ala Leu Ser Gly Val Arg Met Glu Leu Asp Asp Gly Ala Tyr
50 55 60

Pro Leu Leu His Arg Leu Arg Val Thr Thr Ser Leu Asn Asp Ala Phe
65 70 75 80

Asp Gly Ile Asp Ala Ala Phe Leu Ile Gly Ala Val Pro Arg Gly Pro
85 90 95

Gly Met Glu Arg Gly Asp Leu Leu Lys Gln Asn Gly Gln Ile Phe Ser
100 105 110

Leu Gln Gly Ala Ala Leu Asn Thr Ala Ala Lys Arg Asp Ala Lys Ile
115 120 125

Phe Val Val Gly Asn Pro Val Asn Thr Asn Cys Trp Ile Ala Met Lys
130 135 140

His Ala Pro Arg Leu His Arg Lys Asn Phe His Ala Met Leu Arg Leu
145 150 155 160

Asp Gln Asn Arg Met His Ser Met Leu Ala His Arg Ala Glu Val Pro
165 170 175

Leu Glu Glu Val Ser Arg Val Val Ile Trp Gly Asn His Ser Ala Lys
180 185 190

Gln Val Pro Asp Phe Thr Gln Ala Arg Ile Ser Gly Lys Pro Ala Ala
195 200 205

Glu Val Ile Gly Asp Arg Asp Trp Leu Glu Asn Ile Leu Val His Ser
210 215 220

Val Gln Asn Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser
225 230 235 240

Ala Ala Ser Ala Ser Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Phe
245 250 255

Cys Pro Lys Ser Asp Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His
 260 265 270
 Asn Pro Tyr Gly Ile Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg
 275 280 285
 Met Leu Pro Ser Gly Asp Tyr Glu Ile Ile Pro Gly Leu Pro Trp Glu
 290 295 300
 Pro Phe Ile Arg Asn Lys Ile Gln Ile Ser Leu Asp Glu Ile Ala Gln
 305 310 315 320
 Glu Lys Ala Ser Val Ser Ser Leu
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<210> 403
 <211> 217
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 403
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 Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu
 20 25 30
 Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu
 35 40 45
 Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg
 50 55 60
 Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val
 65 70 75 80
 Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu
 85 90 95
 Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile
 100 105 110
 Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile
 115 120 125
 Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro
 130 135 140
 Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp
 145 150 155 160
 Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln Ala Trp Ser
 165 170 175
 Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala Ser Thr Leu
 180 185 190
 Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly Glu Arg Trp
 195 200 205

Pro Glu Leu Val Asp Ile Val Ile Thr
210 215

<210> 404

<211> 270

<212> PRT

<213> Chlamydia pneumoniae

<400> 404

Met Ile Ile Ile Lys Asn Asn Glu Leu Met Ile Arg Arg Phe Phe Lys
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Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser Leu Cys Tyr Ala Ser Ile
20 25 30

Leu Ile Val Leu Ser Ser Leu Val Cys Val Pro Thr Phe Cys Trp Leu
35 40 45

Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe Asn Pro Ser Pro Ile Arg
50 55 60

Asn Leu Phe Leu Val Ser Ser Thr Leu Ser Lys Val Pro Pro Thr Ala
65 70 75 80

Ile Ala Glu His Leu Arg Leu Ser Ala Asp Ala Pro Thr Tyr Leu His
85 90 95

Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser Leu His Ala Leu Gly Ile
100 105 110

Phe Ser Ser Leu Val Ile Glu Lys Ser Pro Asp Asn Lys Gly Ile Thr
115 120 125

Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala Tyr Val Gly Asn Arg Ser
130 135 140

Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys Phe Leu Gly Gln Pro Tyr
145 150 155 160

Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe Phe Ser Gln Glu Asp Leu
165 170 175

Lys Met Gln Lys Leu Pro Lys Glu Lys Met Leu Phe Thr Lys Ile Leu
180 185 190

Leu Lys Glu Leu Ala Met Glu Ser Pro Lys Ile Ile Asp Leu Ser Leu
195 200 205

Ser Asp Ala Tyr Pro Gly Glu Ile Ile Val Thr Leu Ser Ser Gly Ser
210 215 220

Leu Leu Arg Leu Pro Ile Lys Thr Leu Asp Arg Ala Leu Asp Leu Tyr
225 230 235 240

Lys His Met Lys Lys Ser Pro Val Ile Glu Ser Glu Lys Gln Tyr Val
245 250 255

Tyr Asp Leu Arg Phe Pro Asn Phe Leu Leu Leu Lys Ala Leu
260 265 270

<210> 405
<211> 651
<212> PRT
<213> Chlamydia pneumoniae

<400> 405

Met	Val	Asn	Pro	Ile	Gly	Pro	Gly	Pro	Ile	Asp	Glu	Thr	Glu	Arg	Thr
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Pro	Pro	Ala	Asp	Leu	Ser	Ala	Gln	Gly	Leu	Glu	Ala	Ser	Ala	Ala	Asn
			20					25					30		
Lys	Ser	Ala	Glu	Ala	Gln	Arg	Ile	Ala	Gly	Ala	Glu	Ala	Lys	Pro	Lys
		35					40					45			
Glu	Ser	Lys	Thr	Asp	Ser	Val	Glu	Arg	Trp	Ser	Ile	Leu	Arg	Ser	Ala
	50					55					60				
Val	Asn	Ala	Leu	Met	Ser	Leu	Ala	Asp	Lys	Leu	Gly	Ile	Ala	Ser	Ser
65					70					75					80
Asn	Ser	Ser	Ser	Ser	Thr	Ser	Arg	Ser	Ala	Asp	Val	Asp	Ser	Thr	Thr
				85					90					95	
Ala	Thr	Ala	Pro	Thr	Pro	Pro	Pro	Pro	Thr	Phe	Asp	Asp	Tyr	Lys	Thr
			100					105					110		
Gln	Ala	Gln	Thr	Ala	Tyr	Asp	Thr	Ile	Phe	Thr	Ser	Thr	Ser	Leu	Ala
			115				120					125			
Asp	Ile	Gln	Ala	Ala	Leu	Val	Ser	Leu	Gln	Asp	Ala	Val	Thr	Asn	Ile
	130					135					140				
Lys	Asp	Thr	Ala	Ala	Thr	Asp	Glu	Glu	Thr	Ala	Ile	Ala	Ala	Glu	Trp
145					150					155				160	
Glu	Thr	Lys	Asn	Ala	Asp	Ala	Val	Lys	Val	Gly	Ala	Gln	Ile	Thr	Glu
				165					170				175		
Leu	Ala	Lys	Tyr	Ala	Ser	Asp	Asn	Gln	Ala	Ile	Leu	Asp	Ser	Leu	Gly
			180					185					190		
Lys	Leu	Thr	Ser	Phe	Asp	Leu	Leu	Gln	Ala	Ala	Leu	Leu	Gln	Ser	Val
		195					200					205			
Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp	Asn
	210					215					220				
Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val	Asp
225					230					235					240
Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala	Ile
				245					250					255	
Arg	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu	Asn
			260					265					270		
Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala	Ala
		275					280					285			

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Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys Phe Pro
 290                295                300

Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln Ala Glu
305                310                315                320

Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val Pro Asn
                325                330                335

Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser Ile Gly
                340                345                350

Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu Thr Ala
                355                360                365

Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe Asn Thr
370                375                380

Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala Gln Ala
385                390                395                400

Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala Leu Ala
                405                410                415

Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly Gln Gln
                420                425                430

Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala Val Val
435                440                445

Ser Ala Gly Val Pro Pro Ala Ala Ala Ser Ser Ile Gly Ser Ser Val
450                455                460

Lys Gln Leu Tyr Lys Thr Ser Lys Ser Thr Gly Ser Asp Tyr Lys Thr
465                470                475                480

Gln Ile Ser Ala Gly Tyr Asp Ala Tyr Lys Ser Ile Asn Asp Ala Tyr
                485                490                495

Gly Arg Ala Arg Asn Asp Ala Thr Arg Asp Val Ile Asn Asn Val Ser
                500                505                510

Thr Pro Ala Leu Thr Arg Ser Val Pro Arg Ala Arg Thr Glu Ala Arg
515                520                525

Gly Pro Glu Lys Thr Asp Gln Ala Leu Ala Arg Val Ile Ser Gly Asn
530                535                540

Ser Arg Thr Leu Gly Asp Val Tyr Ser Gln Val Ser Ala Leu Gln Ser
545                550                555                560

Val Met Gln Ile Ile Gln Ser Asn Pro Gln Ala Asn Asn Glu Glu Ile
565                570                575

Arg Gln Lys Leu Thr Ser Ala Val Thr Lys Pro Pro Gln Phe Gly Tyr
580                585                590

Pro Tyr Val Gln Leu Ser Asn Asp Ser Thr Gln Lys Phe Ile Ala Lys
595                600                605

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Leu Glu Ser Leu Phe Ala Glu Gly Ser Arg Thr Ala Ala Glu Ile Lys
610 615 620

Ala Leu Ser Phe Glu Thr Asn Ser Leu Phe Ile Gln Gln Val Leu Val
625 630 635 640

Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln
645 650

<210> 406

<211> 1074

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 406

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caggacgagta   atggtgagtg   tactgcaacc   aaagattttc   gcgagtgtaga   gcggatcgca   180
gaacaattgt   ccattccata   ttacacagtt   tcccttttcta   aggaataataa   agagcgagtg   240
ttttctagat   ttctaagaga   atatgcgaac   ggctacactc   ccaatcctga   tgtgttatgc   300
aatcgagaaa   tcaaatttga   ttatttacag   aagaaggtac   tggagctaaa   aggtgatttt   360
ttagccacgg   gacattattg   tcgaggaggg   gctgatggaa   ctgggtttgtc   cagaggaata   420
gaccocaata   aagacaaaag   ttatttctta   tgtggcactc   ctaaggatgc   tttatccaat   480
gtacttttcc   cctctggagg   tatgtataaa   acggagggtac   gtcgaattgc   tcaagaagct   540
gggttagcta   ccggccaaaa   aaaagatagc   acagggattt   gcttcattgg   taaacggcct   600
tttaagagtt   tccttgagca   gttttagtag   gactctctcg   gagacattat   tgattttgat   660
acacaacagg   tagtcggccg   acatgaagga   gccattattt   atacgattgg   acagcgctga   720
gggttaaaaa   taggaggaat   ggaaaagcct   tgttatgttc   ttacgaagaa   tatggaaaag   780
aatattgttt   acattgtaag   ggggtgaagt   catcctttac   tttatcgaca   agagctttta   840
gctaaggaaac   ttaattgttt   tgttcctctg   caggagccta   tgatctgtag   tgctaaaagt   900
cggtagacat   ccctgacagt   gaaatgttct   gtatactctt   tggaagatgg   aacggtaaaa   960
gtgattttcc   atgtccctgt   gaaagctgtc   accctctgac   agactgtagc   tttctaccag   1020
ggggacattt   gtttaggagg   aggagtgtat   gaagtgccta   tgattcatca   gctg          1074
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<210> 407

<211> 1827

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 407

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caagatttga   gtttttttga   gcatttatta   caggttaaat   aggtctctaa   aacatggaaa   180
gagcaatact   taggatggga   tcttgttcaa   agctccggtt   ctgcacagca   gaagcttctg   240
acacaagaaa   atccatcaac   aagtttttgc   cagcagggtcc   ttgctgtatt   tatcgaggga   300
ttaaagtact   ttacagctgg   agtaactttc   ttlgcgatag   aaagtgtcta   ccttccctlat   360
accgtacaaa   aaagttagta   cggccgtttc   tactttgtag   atatcatgac   tttttcttca   420
gagatccgtg   ttggagatga   gttgctagag   gtggatgggg   cgcctgcaca   agatgtaact   480
gctactctat   atggaagcaa   tcacaaaagg   actgcagctg   aagagtctgc   tgctttaaaga   540
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aagattcgtc   gtcccttttg   tactacgaga   gaagttcgtg   tgaattggcg   ttatgttccct   660
gaaggtgtag   gagatttggc   taccatagct   ccttctatca   gggctccaca   gttacagaaa   720
tcgatgagaa   gctttttccc   taagaaagat   gatgcgtttc   atcgtgtctag   ttgcgtattc   780
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ttgaaaaggg   ggtacaatat   tggggatgac   gatgggttcc   tccctgtcat   tgggctgtgt   900
atatgggagt   cggagggctc   ttccgcgctc   tatatttctt   cggtgactga   tggggatggt   960
aagagccata   aagtaggatt   tctaagaatt   cctacatata   gttggcagga   catggagaag   1020
tttgtacctt   caggaccgcc   tccittggaa   gaatttgcta   agattattca   agtattttct   1080
tctaatacac   aagctttgat   tctcgaccaa   acgaacaacc   caggtgtgat   tgtcctttat   1140
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ctttatgcac  tgcctttccat  gttgacagac  cgtccttttag  aacttccctaa  acatagaatg  1200
attctgaactc  aggatgaagt  ggttgatgct  ttagattgggt  taacctcgtt  ggaaaacgta  1260
gacacaaaacg  tggagttctcg  ccttgctctg  ggagacaaca  tggaaaggata  tactgtggat  1320
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<210> 408

<211> 804

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 408

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cccatcggtc  tatggctgac  tctgcctagt  tttttaaatt  tcaagcactc  cctaacgcct  180
attaagacat  tgtttcttac  ctgtagcgag  cctccttgcc  tctctgagct  ttttttctcg  240
gatattcttg  atctttctgc  tgattccctc  ccagctttac  agacattttc  cagcaagtct  300
gccgagcact  ttttaaatga  attaggagtt  tttcttttta  ttctatttga  gaaggttctc  360
gatcataaag  gcttagctat  ttctatgct  ttgcatactc  cgttagcttt  tttaggaaat  420
caaaactcata  cattcatagg  ttatgaagga  caaaccttcc  cagctttgcc  cttttttcaa  480
tccttagaac  tacctacagt  ctcttttctg  caaacagctc  ttccccaaac  accgattcca  540
catcaaacac  tgtctattgt  cagagcgcta  atagatcaac  tacagattga  tctctactgc  600
atcattgact  tatctcaaat  cgtatcattt  ccgggagaat  ttgtgtgtac  ctatctctct  660
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<210> 409

<211> 663

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 409

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ataaaagaag  aatctgttac  acttcggcag  aagccggatg  ccggctgtaa  aaagaaatct  180
tcttggtact  tgagaaaaat  ttctcggcgc  aagaaaccta  aagagaagac  agagcctgtg  240
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gcagaagatc  ctgctttaat  tgcgtgaatg  aaaaagatgc  aaggacggga  ttgggtctgg  480
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agcgttgacg  acgttgccgc  gttcgctcgc  accttaggat  tagactcggg  gacggttacc  600
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ata

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<210> 410

<211> 1470

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 410

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<210> 411

<211> 234

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 411

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cttcgttaaa	ttatcgttaa	agaaggcgc	actattaagg	ctatccgtac	tttaattggt	180
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<210> 412

<211> 1941

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 412

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<210> 413

<211> 693

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 413

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<210> 414

<211> 1599

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 414

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<210> 415

<211> 1395

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 415

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<210> 416

<211> 366

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 416

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<211> 1659

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 417

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<210> 418

<211> 576

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 418

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<210> 419

<211> 825

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 419

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<210> 420

<211> 5310

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 420

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<210> 424

<211> 696

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 424

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<210> 425

<211> 3756

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 425

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<210> 426

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 426

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<210> 427

<211> 894

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 427

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<210> 428

<211> 459

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 428

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<210> 429

<211> 1707

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 429

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<210> 430

<211> 1998

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 430

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<210> 431

<211> 609

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 431

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Val	Pro	Ser 195	Gly	Arg	Thr	Thr	Leu 200	Lys	Ile	Arg	Arg	Pro 205	Phe	Gly	Thr
Thr	Arg 210	Glu	Val	Arg	Val	Lys 215	Trp	Arg	Tyr	Val	Pro 220	Glu	Gly	Val	Gly
Asp 225	Leu	Ala	Thr	Ile	Ala 230	Pro	Ser	Ile	Arg	Ala 235	Pro	Gln	Leu	Gln	Lys 240
Ser	Met	Arg	Ser	Phe 245	Phe	Pro	Lys	Lys	Asp 250	Asp	Ala	Phe	His	Arg 255	Ser
Ser	Ser	Leu	Phe 260	Tyr	Ser	Pro	Met	Val 265	Pro	His	Phe	Trp	Ala 270	Glu	Leu
Arg	Asn 275	His	Tyr	Ala	Thr	Ser	Gly 280	Leu	Lys	Ser	Gly	Tyr 285	Asn	Ile	Gly
Ser	Thr 290	Asp	Gly	Phe	Leu	Pro 295	Val	Ile	Gly	Pro	Val 300	Ile	Trp	Glu	Ser
Glu 305	Gly	Leu	Phe	Arg	Ala 310	Tyr	Ile	Ser	Ser	Val 315	Thr	Asp	Gly	Asp	Gly 320
Lys	Ser	His	Lys	Val	Gly	Phe	Leu	Arg	Ile	Pro	Thr	Tyr	Ser	Trp	Gln

325 330 335
 Asp Met Glu Asp Phe Asp Pro Ser Gly Pro Pro Pro Trp Glu Glu Phe
 340 345 350
 Ala Lys Ile Ile Gln Val Phe Ser Ser Asn Thr Glu Ala Leu Ile Ile
 355 360 365
 Asp Gln Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu
 370 375 380
 Leu Ser Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met
 385 390 395 400
 Ile Leu Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu
 405 410 415
 Leu Glu Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp
 420 425 430
 Asn Met Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys
 435 440 445
 Ser Phe Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu
 450 455 460
 Leu Ser Thr Pro Ile Pro Leu Phe Gly Phe Glu Lys Ile His Pro His
 465 470 475 480
 Pro Arg Val Gln Tyr Ser Lys Pro Ile Cys Val Leu Ile Asn Glu Gln
 485 490 495
 Asp Phe Ser Cys Ala Asp Phe Phe Pro Val Val Leu Lys Asp Asn Asp
 500 505 510
 Arg Ala Leu Ile Val Gly Thr Arg Thr Ala Gly Ala Gly Gly Phe Val
 515 520 525
 Phe Asn Val Gln Phe Pro Asn Arg Thr Gly Ile Lys Thr Cys Ser Leu
 530 535 540
 Thr Gly Ser Leu Ala Val Arg Glu His Gly Ala Phe Ile Glu Asn Ile
 545 550 555 560
 Gly Val Glu Pro His Ile Asp Leu Pro Phe Thr Ala Asn Asp Ile Arg
 565 570 575
 Tyr Lys Gly Tyr Ser Glu Tyr Leu Asp Lys Val Lys Lys Leu Val Cys
 580 585 590
 Gln Leu Ile Asn Asn Asp Gly Thr Ile Ile Leu Ala Glu Asp Gly Ser
 595 600 605
 Phe

<210> 432

<211> 268

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 432
 Met Pro Pro Arg Ser Pro Ser Phe Leu Val His Ile Trp Arg Leu Phe
 5 10 15
 Phe Ala Lys Gly Pro Asn Tyr Ser Leu Pro Tyr Ala Phe Leu Cys Ile
 20 25 30
 Phe Val Ser Val Leu Val Phe Leu Pro Ile Gly Leu Trp Leu Thr Leu
 35 40 45
 Pro Ser Phe Leu Asn Phe Lys His Ser Leu Thr Pro Ile Lys Thr Leu
 50 55 60
 Phe Leu Thr Cys Thr Glu Pro Pro Cys Leu Pro Glu Pro Phe Phe Ser
 65 70 75 80
 Asp Ile Leu His Leu Ser Ala Asp Ser Pro Pro Ala Leu Gln Thr Phe
 85 90 95
 Ser Thr Lys Ser Ala Glu His Phe Leu Asn Glu Leu Gly Val Phe Ser
 100 105 110
 Phe Ile Ser Ile Glu Lys Val Pro Asp His Lys Gly Leu Ala Ile Ser
 115 120 125
 Tyr Ala Leu His Thr Pro Leu Ala Phe Leu Gly Asn Gln Thr His Thr
 130 135 140
 Phe Ile Gly Tyr Glu Gly Gln Thr Phe Pro Ala Leu Pro Phe Phe Gln
 145 150 155 160
 Ser Leu Glu Leu Pro Thr Val Phe Phe Ser Gln Gln Ala Leu Ser Gln
 165 170 175
 Thr Arg Ile Pro His Gln Thr Leu Ser Ile Val Thr Ser Leu Ile Asp
 180 185 190
 Gln Leu Gln Met Asp Pro Pro Ser Ile Ile Asp Leu Ser Gln Ile Asp
 195 200 205
 His Tyr Pro Gly Glu Phe Val Val Ser Leu Ser Ser Gly Thr Leu Leu
 210 215 220
 Arg Phe Arg Lys Asp Ser Phe Leu Pro Gly Ile Gln His Tyr Gln Gln
 225 230 235 240
 Ala Leu Ser Leu Gly Ala Phe Ser Pro Gln Ala Val Ile Cys Asp
 245 250 255
 Leu Arg Cys Glu Asp Tyr Leu Leu Leu Lys Arg Lys
 260 265

<210> 433
 <211> 221
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 433
 Met Lys Lys Phe Ile Tyr Lys Tyr Ser Phe Gly Ala Leu Leu Leu Leu

5 10 15
 Ser Gly Leu Ser Gly Leu Ser Ser Cys Cys Ala Asn Ser Tyr Gly Ser
 20 25 30
 Thr Leu Ala Lys Asn Thr Ala Glu Ile Lys Glu Glu Ser Val Thr Leu
 35 40 45
 Arg Glu Lys Pro Asp Ala Gly Cys Lys Lys Lys Ser Ser Cys Tyr Leu
 50 55 60
 Arg Lys Phe Phe Ser Arg Lys Lys Pro Lys Glu Lys Thr Glu Pro Val
 65 70 75 80
 Leu Pro Asn Phe Lys Ser Tyr Ala Asp Pro Met Thr Asp Ser Glu Arg
 85 90 95
 Lys Asp Leu Ser Phe Val Val Ser Ala Ala Ala Asp Lys Ser Ser Ile
 100 105 110
 Ala Leu Ala Met Ala Gln Gly Glu Ile Lys Gly Ala Leu Ser Arg Ile
 115 120 125
 Arg Glu Ile His Pro Leu Ala Leu Leu Gln Ala Leu Ala Glu Asp Pro
 130 135 140
 Ala Leu Ile Ala Gly Met Lys Lys Met Gln Gly Arg Asp Trp Val Trp
 145 150 155 160
 Asn Ile Phe Ile Thr Glu Leu Ser Lys Val Phe Ser Gln Ala Ala Ser
 165 170 175
 Leu Gly Ala Phe Ser Val Ala Asp Val Ala Ala Phe Ala Ser Thr Leu
 180 185 190
 Gly Leu Asp Ser Gly Thr Val Thr Ser Ile Val Asp Gly Glu Arg Trp
 195 200 205
 Ala Glu Leu Ile Asp Val Val Ile Gln Asn Pro Ala Ile
 210 215 220

<210> 434

<211> 490

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 434

Met Ser Asp Leu Ser Asp Leu Phe Lys Thr His Phe Thr Gln Tyr Ala
 5 10 15
 Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Val Leu Asp Gly Leu
 20 25 30
 Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Arg Met Asp Asp
 35 40 45
 Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
 50 55 60
 His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala

65					70					75				80	
Asn	Lys	Gly	Phe	Leu	Ile	Glu	Thr	Gln	Gly	Asn	Phe	Gly	Asn	Pro	Leu
				85					90					95	
Thr	Gly	Asp	Pro	His	Ala	Ala	Ala	Arg	Tyr	Ile	Glu	Ala	Arg	Leu	Ser
			100					105					110		
Pro	Leu	Ala	Lys	Glu	Val	Leu	Phe	Asn	Thr	Asp	Leu	Met	Thr	Phe	His
		115					120					125			
Asp	Ser	Tyr	Asp	Gly	Arg	Glu	Gln	Glu	Pro	Asp	Ile	Leu	Ala	Ala	Lys
	130				135						140				
Ile	Pro	Leu	Leu	Leu	His	Gly	Val	Asp	Gly	Ile	Ala	Val	Gly	Met	
145				150					155					160	
Thr	Thr	Lys	Ile	Phe	Pro	His	Asn	Phe	Cys	Asp	Leu	Leu	Glu	Ala	Gln
			165						170					175	
Ile	Ala	Ile	Leu	Asn	Asp	Gln	Pro	Phe	Ser	Leu	Leu	Pro	Asp	Phe	Pro
			180					185					190		
Pro	Gly	Gly	Thr	Met	Asp	Ala	Ser	Asp	Tyr	Gln	Asp	Gly	Leu	Gly	Ser
		195					200					205			
Ile	Val	Leu	Arg	Ala	Thr	Ile	Asp	Ile	Ile	Asn	Asp	Lys	Thr	Leu	Leu
	210				215						220				
Ile	Lys	Glu	Ile	Cys	Pro	Ser	Thr	Thr	Thr	Glu	Thr	Leu	Ile	Arg	Ser
225				230						235				240	
Ile	Glu	Asn	Ala	Ala	Lys	Arg	Gly	Ile	Ile	Lys	Ile	Asp	Ser	Ile	Gln
			245					250						255	
Asp	Phe	Ser	Thr	Asp	Leu	Pro	His	Ile	Glu	Ile	Lys	Leu	Pro	Lys	Gly
			260					265					270		
Ile	Tyr	Ala	Lys	Asp	Leu	Leu	Arg	Pro	Leu	Tyr	Thr	His	Thr	Glu	Cys
	275						280					285			
Gln	Val	Ile	Leu	Thr	Ser	Arg	Pro	Thr	Ala	Ile	Tyr	Gln	Gly	Lys	Pro
	290					295					300				
Trp	Glu	Thr	Thr	Ile	Ser	Glu	Ile	Leu	Arg	Leu	Gln	Thr	Lys	Thr	Leu
305				310					315					320	
Gln	Asn	Tyr	Leu	Lys	Lys	Glu	Leu	Leu	Ile	Leu	Glu	Asp	Ser	Leu	Ser
			325						330					335	
Arg	Glu	Leu	Tyr	His	Lys	Thr	Leu	Glu	Tyr	Leu	Phe	Ile	Lys	His	Lys
			340					345					350		
Leu	Tyr	Asp	Thr	Val	Arg	Ser	Met	Leu	Ser	Lys	Arg	Lys	Thr	Ser	Pro
	355						360					365			
Ser	Ser	Ser	Thr	Ile	His	Asn	Ala	Val	Leu	Glu	Ala	Leu	Thr	Pro	Phe
	370					375					380				
Leu	Asp	Thr	Leu	Pro	Ala	Pro	Asp	Lys	Gln	Ala	Thr	Ala	Gln	Leu	Ala
385					390					395				400	

Ala Leu Thr Ile Lys Lys Ile Leu Cys Phe Asp Glu Asn Ser Tyr Glu
405 410 415

Lys Glu Leu Ala Cys Leu Glu Lys Lys Arg Ser Ser Val Gln Lys Asp
420 425 430

Leu Ser Gln Leu Lys Lys Tyr Thr Val Leu Tyr Ile Lys Lys Leu Leu
435 440 445

Glu Thr Tyr Arg Gln Leu Gly His Arg Lys Thr Lys Ile Ala Lys Phe
450 455 460

Asp Asp Leu Pro Thr Glu Arg Val Ser Ala His Lys Lys Ala Lys Glu
465 470 475 480

Leu Ala Ala Leu Asp Gln Glu Glu Asn Phe
485 490

<210> 435

<211> 78

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 435

Met Lys Glu Phe Leu Ala Tyr Ile Val Lys Asn Leu Val Asp Lys Pro
5 10 15

Glu Glu Val His Leu Lys Glu Val Gln Gly Thr Asn Thr Ile Ile Tyr
20 25 30

Glu Leu Thr Val Ala Lys Gly Asp Ile Gly Lys Ile Ile Gly Lys Glu
35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
50 55 60

Arg Asp Asn Val Lys Val Ser Leu Glu Ile Met Glu Glu Arg
65 70 75

<210> 436

<211> 647

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 436

Met Glu Ser Gly Pro Glu Ser Val Ser Ser Asn Gln Ser Ser Met Asn
5 10 15

Pro Ile Ile Asn Gly Gln Ile Ala Ser Asn Ser Glu Thr Lys Glu Ser
20 25 30

Thr Lys Glu Ser Glu Ala Ser Pro Ser Ala Ser Ser Ser Val Ser Ser
35 40 45

Trp Ser Phe Leu Ser Ser Ala Lys His Ala Leu Ile Ser Leu Arg Asp
50 55 60

Ala Ile Leu Asn Lys Asn Ser Ser Pro Thr Asp Ser Leu Ser Gln Leu

65		70		75		80
Glu Ala Ser Thr Ser	Thr Ser Thr Val	Thr Arg Val Ala	Ala Arg Asp			
	85	90	95			
Tyr Asn Glu Ala Lys	Ser Asn Phe Asp	Thr Ala Lys Ser	Gly Leu Glu			
	100	105	110			
Asn Ala Thr Thr Leu	Ala Glu Tyr Glu	Thr Lys Met Ala	Asp Leu Met			
	115	120	125			
Ala Ala Leu Gln Asp	Met Glu Arg Leu	Ala Lys Gln Lys	Ala Glu Val			
	130	135	140			
Thr Arg Ile Lys Glu	Ala Leu Gln Glu	Lys Gln Glu Val	Ile Asp Lys			
	145	150	155			
Leu Asn Gln Leu Val	Lys Leu Glu Lys	Gln Asn Gln Thr	Leu Lys Glu			
	165	170	175			
Thr Leu Thr Thr Thr	Asp Ser Ala Asp	Gln Ile Pro Ala	Ile Asn Ser			
	180	185	190			
Gln Leu Glu Ile Asn	Lys Asn Ser Ala	Asp Gln Ile Ile	Lys Asp Leu			
	195	200	205			
Glu Gly Gln Asn Ile	Ser Tyr Glu Ala	Val Leu Thr Asn	Ala Gly Glu			
	210	215	220			
Val Ile Lys Ala Ser	Ser Glu Ala Gly	Ile Lys Leu Gly	Gln Ala Leu			
	225	230	235			
Gln Ser Ile Val Asp	Ala Gly Asp Gln	Ser Gln Ala Ala	Val Leu Gln			
	245	250	255			
Ala Gln Gln Asn Asn	Ser Pro Asp Asn	Ile Ala Ala Thr	Lys Lys Leu			
	260	265	270			
Ile Asp Ala Ala Glu	Thr Lys Val Asn	Glu Leu Lys Gln	Glu His Thr			
	275	280	285			
Gly Leu Thr Asp Ser	Pro Leu Val Lys	Lys Ala Glu Glu	Gln Ile Ser			
	290	295	300			
Gln Ala Gln Lys Asp	Ile Gln Glu Ile	Lys Pro Ser Gly	Ser Asp Ile			
	305	310	315			
Pro Ile Val Gly Pro	Ser Gly Ser Ala	Ala Ser Ala Gly	Ser Ala Val			
	325	330	335			
Gly Ala Leu Lys Ser	Ser Asn Asn Ser	Gly Arg Ile Ser	Leu Leu Leu			
	340	345	350			
Asp Asp Val Asp Asn	Glu Met Ala Ala	Ile Ala Met Gln	Gly Phe Arg			
	355	360	365			
Ser Met Ile Glu Gln	Phe Asn Val Asn	Asn Pro Ala Thr	Ala Lys Glu			
	370	375	380			
Leu Gln Ala Met Glu	Ala Gln Leu Thr	Ala Met Ser Asp	Gln Leu Val			
	385	390	395	400		

Gly Ala Asp Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala
 405 410 415
 Leu Ala Gln Ala Leu Lys Gln Pro Ser Thr Asp Gly Leu Ala Thr Ala
 420 425 430
 Met Gly Gln Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly Ser Ala
 435 440 445
 Gly Thr Ala Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr
 450 455 460
 Ala Phe Ser Ser Thr Ser Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp
 465 470 475 480
 Gly Tyr Ser Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg
 485 490 495
 Ser Gly Val Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser
 500 505 510
 Arg Ser Val Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp
 515 520 525
 Ala Ser Gln Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu
 530 535 540
 Gly Asp Val Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr
 545 550 555 560
 Ile Val Ser Asn Pro Gln Val Asn Gln Glu Glu Ile Met Gln Lys Leu
 565 570 575
 Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln
 580 585 590
 Asn Ser Ala Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu
 595 600 605
 Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Arg Glu Asn Ala Phe
 610 615 620
 Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile Ala Ser
 625 630 635 640
 Leu Phe Ser Gly Tyr Leu Ser
 645

<210> 437

<211> 231

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 437

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 5 10 15

Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30

Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr
 225 230

<210> 438

<211> 533

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 438

Met Ser Asn Ser Phe Arg Asp Gln Glu Gln Gly Leu Gln Ala Val Phe
 5 10 15
 Arg Ala Ala Arg Val Ile Ser His Met Phe Ser Gln Thr Ile Gly Pro
 20 25 30
 Tyr Gly Phe Ser Thr Ile Val His Asn Val Gln Asp Thr Arg Thr Thr
 35 40 45
 Gln Asp Ser Gln Ser Met Leu Lys Asp Ile Leu Phe Pro Asp Val Phe
 50 55 60
 Glu Asn Ile Gly Met Lys Leu Ile Arg Asp Thr Ala Leu Arg Thr Arg
 65 70 75 80

Met Arg Phe Gly Asp Gly Ala Lys Thr Thr Ala Leu Leu Ile Glu Ala
 85 90 95
 Leu Leu Ala Glu Gly Met Thr Gly Ile Gln Lys Gly Leu Asp Pro His
 100 105 110
 Glu Ile His Arg Gly Met Leu Leu Ala Glu Lys Lys Ile Gln Glu Val
 115 120 125
 Phe Tyr Arg Glu Thr Phe Pro Leu Ser Asp Leu Glu His Thr Val Tyr
 130 135 140
 Val Ser Ser Ile Ala Arg Arg Cys Asn Ser Glu Ile Ala Ser Val Leu
 145 150 155 160
 Ser Ser Ala Val Gly Tyr Gly Gly Lys Asn Gly Tyr Tyr Ile Val Glu
 165 170 175
 Glu His Glu Glu His Glu Thr Tyr Trp His Ala Glu Glu His Ala Val
 180 185 190
 Trp Asp Phe Gly Tyr Ala Ser Pro Tyr Phe Ile Thr His Ala Glu Thr
 195 200 205
 Gly Thr Val Glu Tyr Ser Gln Val Tyr Ile Leu Val Ser Glu Gln Pro
 210 215 220
 Leu His Tyr Ser Asn Pro Ser Phe Leu Thr Phe Leu Gln Ser Val Val
 225 230 235 240
 Gln Ala Gly Lys Thr Pro Leu Val Ile Leu Ala Glu Ala Phe Asp Lys
 245 250 255
 Glu Leu Leu Ala Met Leu Glu Met Asn Gln Ile Glu Arg Val Phe Pro
 260 265 270
 Val Cys Ala Val Lys Val Ser Gly Lys His Ala Arg Glu Ser Leu Glu
 275 280 285
 Asp Ile Ala Val Leu Thr Gly Ala Thr Leu Leu Ser Glu Met Asp Phe
 290 295 300
 Glu Asp Ser Glu Glu Glu Arg Ile Thr Asn Arg Leu Gly Phe Val Ala
 305 310 315 320
 Gly Ile Cys Val Ser Ser Thr Ser Leu Cys Val Pro Arg Glu Thr Asp
 325 330 335
 Asn Lys Gln Arg Met Ala Glu His Cys Ala Phe Leu Gln Asp Lys Leu
 340 345 350
 Ser Phe Ser Gln Glu Glu Glu Ala Ser Ala Arg Leu Arg Arg Arg Leu
 355 360 365
 Ala Arg Leu Ser Ser Gly Glu Val Cys Ile His Ile Ala Ala Asp Cys
 370 375 380
 Ile Pro Gln Glu Glu Ile Gly Tyr Ile Thr Ser Ser Ile Arg Ala Met
 385 390 395 400

Thr Glu Ser Leu Arg Ser Gly Cys Leu Pro Gly Gly Gly Cys Ala Phe
 405 410 415
 Ile Arg Ala Ala Arg Glu Ile Ser Val Pro Leu Ala Leu Ser Pro Ser
 420 425 430
 Glu Arg Phe Gly Phe Leu Ala Val Leu Ser Ala Ala Glu Lys Pro Phe
 435 440 445
 Arg Ala Ile Val Thr Arg Ser Arg Arg Val Glu Glu Glu Val Phe Ser
 450 455 460
 Glu Val Phe Ser Gln Ala Asp Trp Arg Val Gly Phe Asn Gly Val Ser
 465 470 475 480
 Gly Phe Val Glu Asp Ile Val Ser Gln Gly Ile Cys Asp Gly Ala Ser
 485 490 495
 Cys Ile Gln Tyr Ala Leu Ser His Ala Val Gly Thr Thr Gly Leu Leu
 500 505 510
 Leu Thr Ser Ala Leu Phe Ile Ala Ser Gln Glu Pro Met Leu Arg Glu
 515 520 525
 Glu Asn Ser Glu Glu
 530

<210> 439

<211> 465

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 439

Met Asn Glu Ala Phe Asp Cys Val Val Ile Gly Ala Gly Pro Gly Gly
 5 10 15
 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ala Gly Leu Lys Thr Ala Leu
 20 25 30
 Ile Glu Lys Arg Glu Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
 35 40 45
 Pro Ser Lys Ala Leu Leu Ala Gly Ala Glu Val Val Thr Gln Ile Arg
 50 55 60
 His Ala Asp Gln Phe Gly Ile His Val Glu Gly Phe Ser Ile Asn Tyr
 65 70 75 80
 Pro Ala Met Val Gln Arg Lys Asp Ser Val Val Arg Ser Ile Arg Asp
 85 90 95
 Gly Leu Asn Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Phe Ser Gly
 100 105 110
 Arg Gly Ser Leu Ile Ser Ser Thr Glu Val Lys Ile Leu Gly Glu Asn
 115 120 125
 Pro Ser Val Ile Lys Ala His Ser Ile Ile Leu Ala Thr Gly Ser Glu
 130 135 140

Pro Arg Ala Phe Pro Gly Ile Pro Phe Ser Ala Glu Ser Pro Arg Ile
 145 150 155 160
 Leu Cys Ser Thr Gly Val Leu Asn Leu Lys Glu Ile Pro Gln Lys Met
 165 170 175
 Ala Ile Ile Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe
 180 185 190
 His Thr Leu Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile
 195 200 205
 Leu Ala Leu Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe
 210 215 220
 Thr Arg Gln Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile
 225 230 235 240
 Glu Asp Ile Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu
 245 250 255
 Glu Tyr Asp Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu
 260 265 270
 Asn Ile Gly Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val
 275 280 285
 Ile Pro Thr Asp Ala Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala
 290 295 300
 Ile Gly Asp Ile Thr Gly Lys Trp Gln Leu Ala His Val Ala Ser His
 305 310 315 320
 Gln Gly Ile Ile Ala Ala Arg Asn Ile Ala Gly His Lys Glu Glu Ile
 325 330 335
 Asp Tyr Ser Ala Val Pro Ser Val Ile Phe Thr Phe Pro Glu Val Ala
 340 345 350
 Ser Val Gly Leu Ser Pro Thr Ala Ala Gln Gln Gln Lys Ile Pro Val
 355 360 365
 Lys Val Thr Lys Phe Pro Phe Arg Ala Ile Gly Lys Ala Val Ala Met
 370 375 380
 Gly Glu Ala Asp Gly Phe Ala Ala Ile Ile Ser His Glu Thr Thr Gln
 385 390 395 400
 Gln Ile Leu Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile
 405 410 415
 Ser Glu Ile Thr Leu Ala Val Arg Asn Glu Leu Thr Leu Pro Cys Ile
 420 425 430
 Tyr Glu Thr Ile His Ala His Pro Thr Leu Ala Glu Val Trp Ala Glu
 435 440 445
 Ser Ala Leu Leu Ala Val Asp Thr Pro Leu His Met Pro Pro Ala Lys
 450 455 460

Lys

Gln Ala Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu
 115 120 125
 Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln
 130 135 140
 Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr
 145 150 155 160
 Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln
 165 170 175
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 180 185 190
 Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser
 195 200 205
 Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro
 210 215 220
 Glu Asn Ala Cys Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val
 225 230 235 240
 Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val
 245 250 255
 Pro Asp Gly Tyr Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr
 260 265 270
 Leu Gly Asp Met Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe
 275 280 285
 Cys Pro Leu Lys Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr
 290 295 300
 Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu
 305 310 315 320
 Pro Cys Val Gln Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys
 325 330 335
 Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val
 340 345 350
 Leu Arg Asp Val Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val
 355 360 365
 Leu Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr
 370 375 380
 Val Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val
 385 390 395 400
 Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser
 405 410 415
 Cys Ser Asp Cys Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr
 420 425 430
 Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp

435 440 445
 Pro Val Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn
 450 455 460
 Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser
 465 470 475 480
 Lys Glu Leu Gln Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile
 485 490 495
 Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys
 500 505 510
 Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp
 515 520 525
 Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val
 530 535 540
 Ser Asp Thr Glu Asn Thr His Ile Tyr
 545 550

 <210> 442
 <211> 192
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 442
 Met Pro Glu Gly Glu Met Met His Lys Leu Gln Asp Val Ile Asp Arg
 5 10 15
 Lys Leu Leu Asp Ser Arg Arg Ile Phe Phe Ser Glu Pro Val Thr Glu
 20 25 30
 Lys Ser Ala Thr Glu Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Thr
 35 40 45
 Asn Pro Gly Gln Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser
 50 55 60
 Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Ile Ser Ser
 65 70 75 80
 Pro Leu Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val
 85 90 95
 Leu Ser Leu Cys Ala Val Pro Gly Arg Arg Phe Ala Thr Pro His Ala
 100 105 110
 Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Thr Ile Thr Gly Gln
 115 120 125
 Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala
 130 135 140
 Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Gly Gln Ser Arg Glu Val
 145 150 155 160
 Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Ser Ala Asn Glu Ala

[illegible]

244

[illegible]

260							265							270						
Thr	Glu	Gln	Thr	Glu	Ser	Asn	Gly	Asn	Gln	Asp	Gly	Ser	Ser	Glu	Thr					
		275					280					285								
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Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu					
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Ser	Ile	Thr	Thr	Pro	Pro	Leu	Ile	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn					
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Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu					
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Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln					
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Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn					
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 Val Lys Ile Glu Asn Phe Ser Gly Gln Gly Ile Phe Ser Gly Asn Lys
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 Ala Ile Asp Asn Thr Thr Glu Gly Ser Ser Ser Lys Ser Asp Val Leu
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 Gly Gly Ala Val Tyr Ala Lys Thr Leu Phe Asn Leu Asp Ser Gly Ser
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 Ser Arg Arg Thr Val Thr Phe Ser Gly Asn Thr Val Ser Ser Gln Ser
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 Thr Thr Gly Gln Val Ala Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr
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Ile Ala Thr Pro Val Val Phe Ser Lys Asn Ser Ala Thr Asn Asn Ala
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 Asn Asn Thr Thr Asp Thr Gln Arg Lys Asp Thr Phe Gly Gly Ala Ile
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 Asn Glu Tyr Arg Pro Thr Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys
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 Ser Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser
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 Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His
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 Phe Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val
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 Leu Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val Ile Asn Asn Met

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Thr Arg Asn Phe Ala Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro 1330 1335 1340		
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Gly Tyr Thr Gly Thr Leu Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly 1410 1415 1420		
Thr Ile Ser Val Leu Trp Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr 1425 1430 1435 1440		
Val Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln 1445 1450 1455		
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Leu Ala Arg Phe Glu Glu Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly 1475 1480 1485		
Leu Gly Thr Met Leu Ser Gln Val Gly Thr Pro Thr Ser Glu Glu Phe 1490 1495 1500		
Thr Tyr Tyr Ser Arg Gly Ala Ser Val Ala Leu Asp Ala Lys Pro Ala 1505 1510 1515 1520		
His Asp Val Ile Val Gly Ala Ala Phe Ser Lys Met Ile Gly Lys Thr 1525 1530 1535		
Lys Ser Leu Lys Arg Glu Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr 1540 1545 1550		
Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Pro Phe His Phe Val Ile 1555 1560 1565		

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 1635 1640 1645
 Gln Phe Thr Glu Thr Glu Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr
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 Ser Gly Asn Asp Ile Leu Met Tyr Asn Arg Phe Ser Val Ala Tyr Met
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 Leu Ser Ile Tyr Arg Asn Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser
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 Ser Gly Glu Gly Gly Glu Ile Ile Cys Gly Val Pro Thr Arg Asn Ser
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<213> Chlamydia trachomatis serovar D

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 35 40 45
 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr
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 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser
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Ser Ser Asn Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr
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 Thr Thr Thr Pro Asp Pro Lys Gly Gly Ala Phe Tyr Asn Ala His
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 Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu
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 Thr Leu Ser Glu Ile Lys Ile Thr Gly Glu Gly Ala Ile Phe Ser
 130 135 140
 Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Gly Leu Thr Ile Gln Asn
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 Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Glu Ser Thr Ile
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 Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Ser Asn Ser Ala Glu
 180 185 190
 Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala
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 Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp Ser Val Ser
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 Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Asn Leu Gln Ser
 225 230 235 240
 His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr Asp Thr Glu
 245 250 255
 Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala Ile Tyr Ala
 260 265 270
 Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu Phe Ser Ile
 275 280 285
 Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu Lys Asp Val
 290 295 300
 Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn Gly Ala Glu
 305 310 315 320
 Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser Ile Gln Ser
 325 330 335
 Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln Gly Gly Gly
 340 345 350
 Ala Leu Tyr Val Glu Gly Asp Ile Asn Phe Gln Asp Leu Glu Glu Ile
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 Arg Ile Lys Tyr Asn Lys Ala Gly Thr Phe Glu Thr Lys Lys Ile Thr
 370 375 380
 Leu Pro Lys Ala Gln Ala Ser Ala Gly Asn Ala Asp Ala Trp Ala Ser
 385 390 395 400

Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly
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 Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala
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 Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr
 435 440 445
 Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val
 450 455 460
 Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His
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 Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Ile
 485 490 495
 Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu
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 Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Leu Phe Ile Lys
 515 520 525
 Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu
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 Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys
 545 550 555 560
 Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile
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 Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly
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 Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu
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 Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly
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 Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln
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 Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val
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 Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Ser Thr Val Ser Ser Leu
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 Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys
 675 680 685
 Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val
 690 695 700
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 Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser

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Pro	Ala	Thr	Phe	Ser	Asn	Asn	Thr	Ala	Ser	Met	Ala	Thr	Pro	Lys	Thr														
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Gly	Ala	Ile	Ala	Gly	Thr	Ala	Ile	Thr	Leu	Ser	Gly	Val	Ser	Arg	Phe														
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Ser	Gly	Asn	Thr	Ala	Asp	Leu	Gly	Ala	Ala	Ile	Gly	Thr	Leu	Ala	Asn														
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Ala	Asn	Thr	Pro	Ser	Ala	Thr	Ser	Gly	Ser	Gln	Asn	Ser	Ile	Thr	Glu														
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Lys	Ile	Thr	Leu	Glu	Asn	Gly	Ser	Phe	Ile	Phe	Glu	Arg	Asn	Gln	Ala														
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 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
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 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
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 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
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 His Ile Lys His Asp Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
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 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
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 Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn
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 Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala

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Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile Glu Leu Ser						
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Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr Ile Asp Ala						
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Asn Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala Gln Phe Glu						
		290		295		300
His Leu Ala Ser Ser Leu Ile Glu Arg Thr Lys Gln Pro Cys Ala Gln						
305		310		315		320
Ala Leu Lys Asp Ala Lys Leu Ser Ala Ser Asp Ile Asp Asp Val Leu						
		325		330		335
Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Ala Val Val Lys						
		340		345		350
Glu Ile Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro Asp Glu Val						
		355		360		365
Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly Gly Glu Val						
		370		375		380
Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu Gly Ile Glu						
385		390		395		400
Thr Leu Gly Gly Val Met Thr Pro Leu Val Glu Arg Asn Thr Thr Ile						
		405		410		415
Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp Asn Gln Pro						
		420		425		430
Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met Ala Lys Asp						
		435		440		445
Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro						
		450		455		460
Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly						
465		470		475		480
Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser Gly Arg Glu Gln Lys						
		485		490		495
Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu Asp Glu Ile Gln Gln						
		500		505		510
Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu Asp Lys Gln Arg Lys						
		515		520		525
Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly Met Ile Phe Arg Ala						
		530		535		540
Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile Pro Ala Glu Leu Val						
545		550		555		560

Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg Gln Ala Ile Lys Glu
 565 570 575
 Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser Asp Glu Leu Ser Thr
 580 585 590
 His Met Gln Lys Ile Gly Glu Ala Met Gln Ala Gln Ser Ala Ser Ala
 595 600 605
 Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly Pro Asn Ile Asn Ser
 610 615 620
 Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg Pro Pro Ala Gly Gly
 625 630 635 640
 Ser Ala Ser Ser Thr Asp Asn Ile Glu Asp Ala Asp Val Glu Ile Val
 645 650 655
 Asp Lys Pro Glu
 660

<210> 447

<211> 326

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 447

Met Val Ser Gln Thr Val Ser Val Ala Val Thr Gly Gly Thr Gly Gln
 5 10 15
 Ile Ala Tyr Ser Phe Leu Phe Ser Leu Ala His Gly Asp Val Phe Gly
 20 25 30
 Leu Asp Cys Gly Ile Asp Leu Arg Ile Tyr Asp Ile Pro Gly Thr Glu
 35 40 45
 Arg Ala Leu Ser Gly Val Arg Met Glu Leu Asp Asp Gly Ala Phe Pro
 50 55 60
 Leu Leu Gln Arg Val Gln Val Thr Thr Ser Leu His Asp Ala Phe Asp
 65 70 75 80
 Gly Ile Asp Ala Ala Phe Leu Ile Gly Ser Val Pro Arg Gly Pro Gly
 85 90 95
 Met Glu Arg Arg Asp Leu Leu Lys Lys Asn Gly Glu Ile Phe Ala Thr
 100 105 110
 Gln Gly Lys Ala Leu Asn Thr Thr Ala Lys Arg Asp Ala Lys Ile Phe
 115 120 125
 Val Val Gly Asn Pro Val Asn Thr Asn Cys Trp Ile Ala Met Asn His
 130 135 140
 Ala Pro Arg Leu Leu Arg Lys Asn Phe His Ala Met Leu Arg Leu Asp
 145 150 155 160
 Gln Asn Arg Met His Ser Met Leu Ser His Arg Ala Glu Val Pro Leu
 165 170 175

Ser Ala Val Ser Gln Val Val Val Trp Gly Asn His Ser Ala Lys Gln
 180 185
 Val Pro Asp Phe Thr Gln Ala Leu Ile Asn Asp Arg Pro Ile Ala Glu
 195 200 205
 Thr Ile Ala Asp Arg Asp Trp Leu Glu Asn Ile Met Val Pro Ser Val
 210 215 220
 Gln Ser Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser Ala
 225 230 235 240
 Ala Ser Ala Ala Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Tyr Gln
 245 250 255
 Pro Lys Glu Gly Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His Asn
 260 265 270
 Pro Tyr Gly Leu Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg Met
 275 280 285
 Leu Ala Thr Gly Glu Tyr Glu Val Ile Pro Arg Leu Pro Trp Asp Ala
 290 295 300
 Phe Ile Arg Gly Lys Met Gln Ile Ser Leu Asp Glu Ile Leu Gln Glu
 305 310 315 320
 Lys Ala Ser Val Ser Leu
 325

<210> 448

<211> 232

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 448

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp
 5 10 15
 Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu
 35 40 45
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
 50 55 60
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala
 65 70 75 80
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr
 130 135 140
 Val Thr Thr Asp Val Val Lys Thr Val Ala Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala
 165 170 175
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
 180 185 190
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
 210 215 220
 Asp Thr Arg Glu Leu Ile Ala Leu
 225 230

<210> 449

<211> 1252

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 449

Met Phe Lys Cys Pro Glu Arg Val Ser Ile Lys Lys Lys Glu Asp Ile
 5 10 15
 Leu Asp Leu Pro Asn Leu Val Glu Val Gln Ile Lys Ser Tyr Lys Gln
 20 25 30
 Phe Leu Gln Ile Gly Lys Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu
 35 40 45
 Glu Glu Val Phe Arg Glu Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala
 50 55 60
 Thr Ile Leu Glu Tyr Leu Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser
 65 70 75 80
 Pro Glu Glu Cys Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys
 85 90 95
 Val Arg Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val
 100 105 110
 Tyr Met Gly Thr Ile Pro Ile Met Thr Asp Lys Gly Thr Phe Ile Ile
 115 120 125
 Asn Gly Ala Glu Arg Val Val Val Ser Gln Val His Arg Ser Pro Gly
 130 135 140
 Ile Asn Phe Glu Gln Glu Lys His Ser Lys Gly Asn Val Leu Phe Ser
 145 150 155 160
 Phe Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Val Phe Asp
 165 170 175

Ile Asn Asp Leu Ile Tyr Ile His Ile Asp Arg Lys Lys Arg Arg Arg
 180 185 190
 Lys Ile Leu Ala Met Thr Phe Ile Arg Ala Leu Gly Tyr Ser Thr Asp
 195 200 205
 Ala Asp Ile Ile Glu Glu Phe Phe Ser Val Glu Glu Arg Ser Leu Arg
 210 215 220
 Leu Glu Lys Asp Phe Val Ala Leu Val Gly Lys Val Leu Ala Asp Asn
 225 230 235 240
 Val Val Asp Ala Asp Ser Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys
 245 250 255
 Leu Ser Thr Ala Met Leu Lys Arg Ile Leu Asp Ala Gly Val Gln Ser
 260 265 270
 Leu Lys Ile Ala Val Gly Ala Asp Glu Asn His Pro Ile Ile Lys Met
 275 280 285
 Leu Ala Lys Asp Pro Thr Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe
 290 295 300
 Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Val Asn Ala Arg
 305 310 315 320
 Ser Thr Ile Met Arg Leu Phe Phe Asp Ala Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Lys Lys Leu Gly Phe Pro Leu Asp
 340 345 350
 Asp Glu Thr Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Arg Met Gly Asp Glu Lys Thr Ser
 370 375 380
 Ile Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395 400
 Glu Leu Ile Gln Asn His Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Ile Ile Ser Ala Lys Gly Leu Val Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475 480
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495

Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Val Val Arg Asp Gly Ile Val
 530 535 540
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val
 545 550 555 560
 Ile Ala Gln Ala Ser Ala Glu Leu Asp Glu Tyr Asp Met Phe Lys Thr
 565 570 575
 Pro Val Cys Trp Ala Arg Tyr Lys Gly Glu Ala Phe Glu Ala Asp Thr
 580 585 590
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Val
 595 600 605
 Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala
 610 615 620
 Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr
 625 630 635 640
 Glu Ala Ala Ile Val Gly Thr Gly Leu Glu Gly Arg Ala Ala Lys Asp
 645 650 655
 Ser Gly Ala Ile Ile Val Ala Gln Glu Asp Gly Val Val Glu Tyr Val
 660 665 670
 Asp Ser Tyr Glu Ile Val Val Ala Lys Lys Asn Asn Pro Thr Leu Lys
 675 680 685
 Asp Arg Tyr Gln Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys
 690 695 700
 Ile Asn Gln Thr Pro Leu Cys Ser Val Gly Asp Val Val Thr His Gly
 705 710 715 720
 Asp Val Leu Ala Asp Gly Pro Ala Thr Asp Lys Gly Glu Leu Ala Leu
 725 730 735
 Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe
 740 745 750
 Glu Asp Ala Ile Ile Ile Ser Glu Arg Leu Ile Lys Gln Asp Ala Tyr
 755 760 765
 Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys
 770 775 780
 Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Glu Glu
 785 790 795 800
 Val Leu Ala Asn Leu Gly Glu Asp Gly Val Val Arg Ile Gly Ala Glu
 805 810 815
 Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu

820										825										830																																			
Thr	Glu	Leu	Ala	Pro	Glu	Glu	Arg	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu					Thr	Glu	Leu	Ala	Pro	Glu	Glu	Arg	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu			Thr	Glu	Leu	Ala	Pro	Glu	Glu	Arg	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu		
835										840										845																																			
Lys	Ala	Ala	Asp	Val	Lys	Asp	Ala	Ser	Leu	Thr	Val	Pro	Pro	Gly	Thr					Lys	Ala	Ala	Asp	Val	Lys	Asp	Ala	Ser	Leu	Thr	Val	Pro	Pro	Gly	Thr			Lys	Ala	Ala	Asp	Val	Lys	Asp	Ala	Ser	Leu	Thr	Val	Pro	Pro	Gly	Thr		
850										855										860																																			
Glu	Gly	Val	Val	Met	Asp	Val	Lys	Val	Phe	Ser	Arg	Lys	Asp	Arg	Leu					Glu	Gly	Val	Val	Met	Asp	Val	Lys	Val	Phe	Ser	Arg	Lys	Asp	Arg	Leu			Glu	Gly	Val	Val	Met	Asp	Val	Lys	Val	Phe	Ser	Arg	Lys	Asp	Arg	Leu		
865										870										875																																			
Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp					Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp			Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp		
885										890										895																																			
Leu	Gln	Lys	Glu	Tyr	Lys	Ser	Gln	Leu	Ala	Gln	Leu	Lys	Val	Glu	His					Leu	Gln	Lys	Glu	Tyr	Lys	Ser	Gln	Leu	Ala	Gln	Leu	Lys	Val	Glu	His			Leu	Gln	Lys	Glu	Tyr	Lys	Ser	Gln	Leu	Ala	Gln	Leu	Lys	Val	Glu	His		
900										905										910																																			
Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala					Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala			Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala		
915										920										925																																			
Ile	Ile	His	Arg	Arg	Ser	Ala	Asp	Ile	Leu	Val	Gln	Glu	Gly	Ala	Ile					Ile	Ile	His	Arg	Arg	Ser	Ala	Asp	Ile	Leu	Val	Gln	Glu	Gly	Ala	Ile			Ile	Ile	His	Arg	Arg	Ser	Ala	Asp	Ile	Leu	Val	Gln	Glu	Gly	Ala	Ile		
930										935										940																																			
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Leu	Leu	Glu	Arg	Glu	Ser	Leu	Val	Asp					Phe	Asp	Gln	Glu	Thr	Ile	Glu	Leu	Leu	Glu	Arg	Glu	Ser	Leu	Val	Asp			Phe	Asp	Gln	Glu	Thr	Ile	Glu	Leu	Leu	Glu	Arg	Glu	Ser	Leu	Val	Asp		
945										950										955																																			
Leu	Leu	Met	Ala	Pro	Cys	Asp	Met	Tyr	Asp	Val	Leu	Lys	Asp	Ile	Leu					Leu	Leu	Met	Ala	Pro	Cys	Asp	Met	Tyr	Asp	Val	Leu	Lys	Asp	Ile	Leu			Leu	Leu	Met	Ala	Pro	Cys	Asp	Met	Tyr	Asp	Val	Leu	Lys	Asp	Ile	Leu		
965										970										975																																			
Ser	Ser	Tyr	Glu	Thr	Ala	Val	Gln	Arg	Leu	Glu	Val	Asn	Tyr	Lys	Thr					Ser	Ser	Tyr	Glu	Thr	Ala	Val	Gln	Arg	Leu	Glu	Val	Asn	Tyr	Lys	Thr			Ser	Ser	Tyr	Glu	Thr	Ala	Val	Gln	Arg	Leu	Glu	Val	Asn	Tyr	Lys	Thr		
980										985										990																																			
Glu	Ala	Glu	His	Ile	Lys	Glu	Gly	Asp	Ala	Asp	Leu	Asp	His	Gly	Val					Glu																																			

Ala Arg Ser Ile Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly
 1155 1160 1165
 Gly Lys Ala Gln Met Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp
 1170 1175 1180
 Ala Leu Glu Ala Tyr Gly Val Ala His Met Leu Gln Glu Ile Leu Thr
 1185 1190 1195 1200
 Val Lys Ser Asp Asp Val Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile
 1205 1210 1215
 Val Lys Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn
 1220 1225 1230
 Val Leu Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met
 1235 1240 1245
 Val Val Asp Ala
 1250

 <210> 450
 <211> 298
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 450
 Met Leu Lys Ile Asp Leu Thr Gly Lys Ile Ala Phe Ile Ala Gly Ile
 5 10 15
 Gly Asp Asp Asn Gly Tyr Gly Trp Gly Ile Ala Lys Met Leu Ala Glu
 20 25 30
 Ala Gly Ala Thr Ile Leu Val Gly Thr Trp Val Pro Ile Tyr Lys Ile
 35 40 45
 Phe Ser Gln Ser Leu Glu Leu Gly Lys Phe Asn Ala Ser Arg Glu Leu
 50 55 60
 Ser Asn Gly Glu Leu Leu Thr Phe Ala Lys Ile Tyr Pro Met Asp Ala
 65 70 75 80
 Ser Phe Asp Thr Pro Glu Asp Ile Pro Gln Glu Ile Leu Glu Asn Lys
 85 90 95
 Arg Tyr Lys Asp Leu Ser Gly Tyr Thr Val Ser Glu Val Val Glu Gln
 100 105 110
 Val Lys Lys His Phe Gly His Ile Asp Ile Leu Val His Ser Leu Ala
 115 120 125
 Asn Ser Pro Glu Ile Ala Lys Pro Leu Leu Asp Thr Ser Arg Lys Gly
 130 135 140
 Tyr Leu Ala Ala Leu Ser Thr Ser Ser Tyr Ser Phe Ile Ser Leu Leu
 145 150 155 160
 Ser His Phe Gly Pro Ile Met Asn Ala Gly Ala Ser Thr Ile Ser Leu
 165 170 175

Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly Gly Gly Met
 180 185 190

Asn Ala Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Val Leu Ala Trp
 195 200 205

Glu Ala Gly Arg Arg Trp Gly Val Arg Val Asn Thr Ile Ser Ala Gly
 210 215 220

Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met
 225 230 235 240

Val Asp Tyr Tyr Gln Asp Trp Ala Pro Leu Pro Ser Pro Met Glu Ala
 245 250 255

Glu Gln Val Gly Ala Ala Ala Ala Phe Leu Val Ser Pro Leu Ala Ser
 260 265 270

Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met
 275 280 285

Gly Ile Gly Pro Glu Met Phe Pro Lys Asp
 290 295

<210> 451

<211> 298

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 451

Met Ser Leu Gln Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr
 5 10 15

His Gln Ser His Leu Leu His Asp Arg Val Val Lys Ala Leu His Gln
 20 25 30

Tyr Tyr Asp Ser Gly Trp Gln Leu Phe Phe Leu Thr Gly Arg Tyr Phe
 35 40 45

Ser Tyr Ala Tyr Pro Leu Phe Gln Asn Phe Ser Val Pro Phe Leu Leu
 50 55 60

Gly Ser Gln Asn Gly Ser Ser Val Trp Ser Ser Thr Asp Lys Glu Phe
 65 70 75 80

Ile Tyr Phe Arg Ser Leu Ser Arg Asp Phe Leu Tyr Val Leu Glu Lys
 85 90 95

Tyr Phe Glu Asp Leu Asp Leu Ile Ala Cys Ile Glu Ser Gly Ala Ser
 100 105 110

Asn Arg Asp Val Tyr Phe Arg Lys Gly Leu Gly Lys Thr Ser Gln Glu
 115 120 125

Leu Lys Ala Ile Leu Asp Ala Val Tyr Phe Pro Thr Pro Glu Ala Ala
 130 135 140

Arg Leu Leu Val Asp Val Gln Gly His Leu Ser Glu Glu Phe Ser Tyr
 145 150 155 160

Glu Asp Phe Ala Ile Ala Lys Phe Phe Gly Glu Arg Glu Glu Val Lys
 165 170 175
 Lys Ile Met Asp Arg Phe Ile Gln Ser Pro Glu Val Ser Ser Gln Val
 180 185 190
 Thr Met Asn Tyr Met Arg Trp Pro Phe Asp Phe Lys Tyr Ala Val Leu
 195 200 205
 Leu Leu Thr Leu Lys Asp Val Ser Lys Gly Phe Ala Val Asp Gln Val
 210 215 220
 Val Gln Thr Phe Tyr Lys Glu Asn Lys Pro Phe Ile Met Ala Ser Gly
 225 230 235 240
 Asp Asp Ala Asn Asp Ile Asp Leu Leu Ser Arg Gly Asp Phe Lys Ile
 245 250 255
 Val Ile Gln Thr Ala Pro Glu Glu Met His Gly Leu Ala Asp Phe Leu
 260 265 270
 Ala Pro Pro Ala Lys Asp Phe Gly Ile Leu Ser Ala Trp Glu Ala Gly
 275 280 285
 Glu Leu Arg Tyr Lys Gln Leu Val Asn Pro
 290 295
 <210> 452
 <211> 153
 <212> PRT
 <213> Chlamydia trachomatis serovar D
 <400> 452
 Met Leu Arg Leu Phe Gln His Ile Leu Cys Phe Leu Glu Glu Asp Pro
 5 10 15
 Ser Phe Val Asp Val Pro Gln Glu Leu Ser Phe Val Asn Glu Ala Phe
 20 25 30
 Ser Gly Ser Met Arg Trp Glu Val Gly Arg Met Leu Gly Ser Leu Leu
 35 40 45
 Leu Leu Leu Gly Ile Phe Gly Gly Gly Cys Leu Leu Phe Arg Arg Phe
 50 55 60
 Leu Arg Ser Arg Gly His Leu Pro Ser Gly Asn Ser Ser Ile Lys Ile
 65 70 75 80
 Leu Asp Gln Arg Val Leu Ala Ser Lys Thr Ser Ile Tyr Val Ile Lys
 85 90 95
 Val Ala Asn Lys Thr Leu Val Val Ala Glu Arg Gly Glu Arg Val Thr
 100 105 110
 Leu Leu Ser Glu Phe Pro Pro Asn Thr Asp Leu Asn Glu Leu Ile Gln
 115 120 125
 Lys Asp Gln Lys Lys Pro Ser Thr Pro Arg Gly Glu Met Leu Ser Gly
 130 135 140

Phe Leu Lys Gln Phe Lys Glu Lys Lys
145 150

<210> 453

<211> 569

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 453

Met Pro Lys Gln Ala Asp Tyr Thr Trp Gly Ala Lys Lys Asn Leu Asp
5 10 15

Thr Ile Ala Cys Leu Pro Glu Asp Val Lys Gln Phe Lys Asp Leu Leu
20 25 30

Tyr Ala Met Tyr Gly Phe Thr Ala Thr Glu Glu Glu Pro Thr Ser Glu
35 40 45

Val His Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Ser Lys
50 55 60

Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
65 70 75 80

Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Thr Val Gly Ala Glu
85 90 95

Val Glu Val Tyr Leu Asp Gln Thr Glu Asp Asp Glu Gly Lys Val Val
100 105 110

Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
115 120 125

Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
130 135 140

Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
145 150 155 160

Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
165 170 175

Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Asp Arg Arg
180 185 190

Asn Val Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
195 200 205

Lys Lys Ala Glu Leu Ile Glu Gln Ile Thr Ile Gly Glu Arg Arg Lys
210 215 220

Gly Ile Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
225 230 235 240

Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
245 250 255

Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
260 265 270

Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
 275 280
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Arg Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Val Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Asn Glu Val Val Asn Lys
 340 345 350
 Gly Asp Glu Val Glu Val Val Val Leu Ser Ile Gln Lys Asp Glu Gly
 355 360 365
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Lys His Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu Arg Val Thr Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430
 Pro Ser Glu Leu Phe Lys Lys Gly Asn Thr Val Glu Ala Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Thr Pro Asn Pro Trp Asp Glu Ile Glu Val Met Phe Pro Val Gly Ser
 465 470 475 480
 Asp Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Glu Lys Pro Phe Ala Lys Ile Glu Asp Val Leu Ser Ile Gly Asp Lys
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
 Leu Ser Ile Lys Glu Phe Leu Val His Gly Gly Asp Ala Gly His Asp
 545 550 555 560
 Ala Glu Glu Glu Ser Ser Asp Arg Asp
 565

<210> 454

<211> 666

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 454

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Met Glu Ser Leu Ser Val Arg Ser Thr Ile Pro Leu Pro Leu Gly Ala
      5              10              15

Lys Lys Leu Ser Ala Asp Arg Tyr Arg Phe Ser Leu Phe Ser Ser Gln
      20              25              30

Ala Gln Gln Val Thr Leu Val Leu Asp Pro Leu Ser Glu Ile His
      35              40              45

Glu Ile Pro Leu Ser Ser Thr Asp His Arg Thr Gly Ala Ile Trp His
      50              55              60

Ile Glu Ile Ala Gly Ile Ser Ser Glu Trp Ser Tyr Ala Tyr Lys Leu
      65              70              75              80

Arg Gly Thr Asp Leu Ser Ser Gln Lys Phe Ala Thr Asp Ser Tyr Ile
      85              90              95

Ala Asp Pro Tyr Ser Lys Asn Ile Tyr Ser Pro Gln Leu Phe Gly Ser
      100             105             110

Pro Lys Gln Glu Lys Asp Tyr Ala Phe Ser Tyr Leu Lys His Glu Asp
      115             120             125

Phe Asp Trp Glu Gly Asp Thr Pro Leu His Leu Pro Lys Glu Asn Tyr
      130             135             140

Phe Ile Tyr Glu Met His Val Arg Ser Phe Thr Arg Asp Pro Ser Ser
      145             150             155             160

Gln Val Ser His Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp
      165             170             175

His Leu Lys Gln Leu Gly Val His Ala Val Glu Leu Leu Pro Ile Phe
      180             185             190

Glu Phe Asp Glu Thr Val His Pro Phe Lys Asn Gln Asp Phe Pro His
      195             200             205

Leu Cys Asn Tyr Trp Gly Tyr Ser Ser Val Asn Phe Phe Cys Pro Ser
      210             215             220

Arg Arg Tyr Thr Tyr Gly Ala Asp Pro Cys Ala Pro Ala Arg Glu Phe
      225             230             235             240

Lys Thr Leu Val Lys Ala Leu His Arg Ala Gly Ile Glu Val Ile Leu
      245             250             255

Asp Val Val Phe Asn His Thr Gly Phe Glu Gly Thr Ser Cys Pro Leu
      260             265             270

Pro Trp Ile Asp Leu Glu Ser Tyr Tyr Met Val Asn Asp His Gly Asp
      275             280             285

Leu Met Asn Phe Ser Gly Cys Gly Asn Thr Val Asn Thr Asn Thr Pro
      290             295             300

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Thr Thr Leu Lys Trp Ile Leu Asp Ala Leu Arg Tyr Trp Val Gln Glu
 305 310 315 320
 Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe Ser Arg
 325 330 335
 Asp Pro Gln Gly Val Pro Leu Pro Leu Thr Pro Ile Leu Gln Ala Ile
 340 345 350
 Ser Ser Asp Ser Ile Leu Ser Glu Thr Lys Leu Ile Ala Glu Pro Trp
 355 360 365
 Asp Ala Gly Gly Leu Tyr Gln Leu Gly His Phe Pro Ser Ile Ser Thr
 370 375 380
 Arg Trp Ser Glu Trp Asn Gly Cys Tyr Arg Asp His Val Lys Ala Phe
 385 390 395 400
 Leu Asn Gly Asp Ala His Gln Val Ser Ser Phe Ala Ser Arg Ile Ser
 405 410 415
 Gly Ser His Asp Ile Tyr Pro Asn Gly Lys Pro Thr Asn Ser Ile Asn
 420 425 430
 Tyr Ile Cys Ser His Asp Gly Phe Thr Leu Tyr Asp Thr Val Ala Tyr
 435 440 445
 Asn Asp Lys His Asn Glu Glu Asn Gly Glu Tyr Asn Arg Asp Gly Thr
 450 455 460
 Ser Ala Asn Tyr Ser Tyr Asn Phe Gly Cys Glu Gly Glu Thr Thr Asp
 465 470 475 480
 Pro Thr Ile Cys Ala Leu Arg Glu Arg Gln Met Lys Asn Phe Phe Leu
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 Ala Leu Phe Leu Ser Gln Gly Ile Pro Met Ile Gln Ser Gly Asp Glu
 500 505 510
 Tyr Gly His Thr Ala Tyr Gly Asn Asn Asn His Trp Cys Leu Asp Thr
 515 520 525
 Lys Ile Asn Tyr Phe Leu Trp Asp Arg Leu Ala Glu Arg Lys Glu Leu
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 Phe Ser Phe Leu Cys Gln Val Ile Ala Leu Arg Lys Ala Tyr Thr Glu
 545 550 555 560
 Leu Phe Asn Thr Ser Phe Leu Ser Glu Asp Thr Ile Thr Trp Leu Asn
 565 570 575
 Thr Lys Gly Ser Pro Arg Glu Trp Gly Ala Asp His Tyr Leu Ala Phe
 580 585 590
 Glu Leu Lys His Leu Asn Tyr Ser Leu Phe Val Ala Phe Tyr Ser Gly
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 Asn Glu Arg Ile Glu Ile Ser Leu Pro Lys Pro Arg Lys Glu His Leu
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<211> 882						
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<212> DNA						
<213> Chlamydia pneumoniae						
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<210> 457						
<211> 1656						
<212> DNA						

<213> Chlamydia pneumoniae

<400> 457

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tatgctaggg	atctatggaa	agaagaaatt	cttgatgtta	taaacgaaga	atttcatttg	1620
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<210> 458

<211> 294

<212> DNA

<213> Chlamydia pneumoniae

<400> 458

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<210> 459

<211> 618

<212> DNA

<213> Chlamydia pneumoniae

<400> 459

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cataggaaaca	tattatga					618

<210> 460
 <211> 1809
 <212> DNA
 <213> *Chlamydia pneumoniae*

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 gccgctgac ccgtgagaat tgctcaacag attgaagatt atataggcct agacactacg 480
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<210> 461
 <211> 975
 <212> DNA
 <213> *Chlamydia pneumoniae*

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975

<210> 462
 <211> 1980
 <212> DNA
 <213> Chlamydia pneumoniae

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1860
1920
1980

<210> 463
 <211> 1236
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 463
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240
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420
480
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600
660
720
780

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 <211> 1215
 <212> DNA
 <213> *Chlamydia pneumoniae*

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<210> 465
 <211> 1632
 <212> DNA
 <213> *Chlamydia pneumoniae*

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<211> 312

<212> DNA

<213> Chlamydia pneumoniae

<400> 466

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<210> 467

<211> 1089

<212> DNA

<213> Chlamydia pneumoniae

<400> 467

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<210> 468

<211> 1308

<212> DNA

<213> Chlamydia pneumoniae

<400> 468

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<210> 469

<211> 1749

<212> DNA

<213> Chlamydia pneumoniae

<400> 469

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<210> 470

<211> 516

<212> DNA

<213> Chlamydia pneumoniae

<400> 470

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<210> 471

<211> 1083

<212> DNA

<213> Chlamydia pneumoniae

<400> 471

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<210> 472

<211> 1200

<212> DNA

<213> Chlamydia pneumoniae

<400> 472

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<210> 473

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 473

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<210> 474

<211> 741

<212> DNA

<213> Chlamydia pneumoniae

<400> 474

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<210> 475

<211> 1062

<212> DNA

<213> Chlamydia pneumoniae

<400> 475

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<210> 476

<211> 561

<212> DNA

<213> Chlamydia pneumoniae

<400> 476

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<211> 3135

<212> DNA

<213> Chlamydia pneumoniae

<400> 477

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<211> 1041

<212> DNA

<213> Chlamydia pneumoniae

<400> 478

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<211> 984

<212> DNA

<213> Chlamydia pneumoniae

<400> 479

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 <211> 444
 <212> DNA
 <213> *Chlamydia pneumoniae*

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<210> 481
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<210> 482
 <211> 1908
 <212> DNA

<213> Chlamydia pneumoniae

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<210> 483

<211> 945

<212> DNA

<213> Chlamydia pneumoniae

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<210> 484

<211> 3723

<212> DNA

<213> Chlamydia pneumoniae

<400> 484

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<211> 1731

<212> DNA

<213> Chlamydia pneumoniae

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Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
          305          310          315          320
Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
          325          330          335
Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
          340          345          350
Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
          355          360          365
Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
          370          375          380
Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
          385          390

```

<210> 492

<211> 560

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> 553,554,555,556,558,559,560

<223> Xaa = Any Amino Acid

<400> 492

```

Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr Ala Asn Gly
1          5          10          15
Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro Ala Asp Val
          20          25          30
Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu Tyr Ile Cys
          35          40          45
Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala Asp Arg Glu
          50          55          60
Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His Lys
          65          70          75          80
Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe Ser Arg Thr
          85          90          95
Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr Ser Gln Leu
          100          105          110
Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln Leu Tyr Ser
          115          120          125

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Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu Gly Thr Cys
 130 135 140
 Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys Gln Ser Cys
 145 150 155 160
 Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Gly Pro Lys Ser Lys Ile
 165 170 175
 Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser Tyr Phe Leu
 180 185 190
 Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln Gly Cys Tyr
 195 200 205
 Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile Glu His Val
 210 215 220
 Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile Pro Val Pro
 225 230 235 240
 Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile Gly
 245 250 255
 Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly Asn Pro Asp
 260 265 270
 Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr Val Gln Phe
 275 280 285
 Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe Pro Ala Met
 290 295 300
 Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala Leu Val Val
 305 310 315 320
 Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys Ser Glu Gly
 325 330 335
 Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser Leu Asp Lys
 340 345 350
 Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser Asp Ser Glu
 355 360 365
 Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu Leu Val Gly
 370 375 380
 Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala Glu Lys Asn
 385 390 395 400
 His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu Asp Ser Asp
 405 410 415
 Arg Ala Phe Leu Glu Glu Ala Arg Gln Leu Val Arg Asp Ala Glu Lys
 420 425 430
 Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val Ile Met Ser
 435 440 445
 Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala Pro Trp Lys
 450 455 460
 Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile Leu Phe Cys
 465 470 475 480
 Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Ile
 485 490 495
 Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro Lys Ser Leu
 500 505 510
 Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu Trp Lys Glu
 515 520 525
 Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys Ser Pro Arg
 530 535 540
 Leu Leu Phe Thr Thr Val Glu Thr Xaa Xaa Xaa Phe Xaa Xaa Xaa
 545 550 555 560

<210> 493

<211> 97

<212> PRT

<213> Chlamydia pneumoniae

<400> 493

Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn Lys Leu Phe
 1 5 10 15
 Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln Ala Lys Ile
 20 25 30
 Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Thr
 35 40 45
 Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe Thr Glu Glu
 50 55 60
 Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg Ser Glu His
 65 70 75 80
 Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp Ser Asp Val
 85 90 95
 Lys

<210> 494
 <211> 205
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 494
 Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro Asp His Gln Lys
 1 5 10 15
 Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala Gly Val Gly Lys
 20 25 30
 Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser Ser Ala Phe Ala
 35 40 45
 Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu Gly Glu Val Pro
 50 55 60
 Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe Gln Arg Leu Leu
 65 70 75 80
 Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe Gly Glu Cys Tyr
 85 90 95
 Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser Leu Gly Lys His
 100 105 110
 Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe Ile Arg Ser Arg
 115 120 125
 Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser Gln Glu Glu Leu
 130 135 140
 Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly Ser Gln Arg Lys
 145 150 155 160
 Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala Ala Asn Gln Phe
 165 170 175
 Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala Tyr Arg Val Leu
 180 185 190
 Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile Leu
 195 200 205

<210> 495
 <211> 602
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 495
 Met Lys Glu Tyr Lys Ile Glu Asn Ile Arg Asn Phe Ser Ile Ile Ala
 1 5 10 15
 His Ile Asp His Gly Lys Ser Thr Ile Ala Asp Arg Leu Leu Glu Ser
 20 25 30
 Thr Ser Thr Val Glu Glu Arg Glu Met Arg Glu Gln Leu Leu Asp Ser
 35 40 45
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val

50					55					60					
Thr	Met	Thr	Tyr	Leu	Tyr	Glu	Gly	Glu	Val	Tyr	Gln	Leu	Asn	Leu	Ile
65					70					75					80
Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Leu
				85					90					95	
Ser	Ala	Cys	Glu	Gly	Ala	Leu	Leu	Ile	Val	Asp	Ala	Ala	Gln	Gly	Val
			100					105					110		
Gln	Ala	Gln	Ser	Leu	Ala	Asn	Val	Tyr	Leu	Ala	Leu	Glu	Arg	Asp	Leu
			115				120					125			
Glu	Ile	Ile	Pro	Val	Leu	Asn	Lys	Ile	Asp	Leu	Pro	Ala	Ala	Asp	Pro
			130			135					140				
Val	Arg	Ile	Ala	Gln	Gln	Ile	Glu	Asp	Tyr	Ile	Gly	Leu	Asp	Thr	Thr
145				150					155					160	
Asn	Ile	Ile	Ala	Cys	Ser	Ala	Lys	Thr	Gly	Gln	Gly	Ile	Pro	Ala	Ile
				165					170					175	
Leu	Lys	Ala	Ile	Ile	Asp	Leu	Val	Pro	Pro	Lys	Ala	Pro	Ala	Glu	
			180					185				190			
Thr	Glu	Leu	Lys	Ala	Leu	Val	Phe	Asp	Ser	His	Tyr	Asp	Pro	Tyr	Val
			195				200					205			
Gly	Ile	Met	Val	Tyr	Val	Arg	Ile	Ile	Ser	Gly	Glu	Leu	Lys	Lys	Gly
			210			215				220					
Asp	Arg	Ile	Thr	Phe	Met	Ala	Ala	Lys	Gly	Ser	Ser	Phe	Glu	Val	Leu
225				230						235				240	
Gly	Ile	Gly	Ala	Phe	Leu	Pro	Lys	Ala	Thr	Phe	Ile	Glu	Gly	Ser	Leu
				245					250					255	
Arg	Pro	Gly	Gln	Val	Gly	Phe	Phe	Ile	Ala	Asn	Leu	Lys	Lys	Val	Lys
			260					265					270		
Asp	Val	Lys	Ile	Gly	Asp	Thr	Val	Thr	Lys	Thr	Lys	His	Pro	Ala	Lys
			275				280					285			
Thr	Pro	Leu	Glu	Gly	Phe	Lys	Glu	Ile	Asn	Pro	Val	Val	Phe	Ala	Gly
			290			295				300					
Ile	Tyr	Pro	Ile	Asp	Ser	Ser	Asp	Phe	Asp	Thr	Leu	Lys	Asp	Ala	Leu
305				310					315						320
Gly	Arg	Leu	Gln	Leu	Asn	Asp	Ser	Ala	Leu	Thr	Ile	Glu	Gln	Glu	Ser
				325					330					335	
Ser	His	Ser	Leu	Gly	Phe	Gly	Phe	Arg	Cys	Gly	Phe	Leu	Gly	Leu	Leu
			340					345					350		
His	Leu	Glu	Ile	Ile	Phe	Glu	Arg	Ile	Ile	Arg	Glu	Phe	Asp	Leu	Asp
			355				360					365			
Ile	Ile	Ala	Thr	Ala	Pro	Ser	Val	Ile	Tyr	Lys	Val	Val	Leu	Lys	Asn
			370			375				380					
Gly	Lys	Val	Leu	Asp	Ile	Asp	Asn	Pro	Ser	Gly	Tyr	Pro	Asp	Pro	Ala
385				390					395					400	
Ile	Ile	Glu	His	Val	Glu	Glu	Pro	Trp	Val	His	Val	Asn	Ile	Ile	Thr
			405					410						415	
Pro	Gln	Glu	Tyr	Leu	Ser	Asn	Ile	Met	Asn	Leu	Cys	Leu	Asp	Lys	Arg
			420					425				430			
Gly	Ile	Cys	Val	Lys	Thr	Glu	Met	Leu	Asp	Gln	His	Arg	Leu	Val	Leu
			435			440						445			
Ala	Tyr	Glu	Leu	Pro	Leu	Asn	Glu	Ile	Val	Ser	Asp	Phe	Asn	Asp	Lys
			450			455						460			
Leu	Lys	Ser	Val	Thr	Lys	Gly	Tyr	Gly	Ser	Phe	Asp	Tyr	Arg	Leu	Gly
465				470					475					480	
Asp	Tyr	Arg	Lys	Gly	Ser	Ile	Ile	Lys	Leu	Glu	Val	Leu	Ile	Asn	Glu
				485					490					495	
Glu	Pro	Ile	Asp	Ala	Phe	Ser	Cys	Leu	Val	His	Arg	Asp	Lys	Ala	Glu
			500					505					510		
Ser	Arg	Gly	Arg	Ser	Ile	Cys	Glu	Lys	Leu	Val	Asp	Val	Ile	Pro	Gln
			515				520					525			
Gln	Leu	Phe	Lys	Ile	Pro	Ile	Gln	Ala	Ala	Ile	Asn	Lys	Lys	Val	Ile
			530			535						540			

Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn Val Thr Ala Lys Cys
 545 550 555 560
 Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Glu Lys Gln Lys
 565 570 575
 Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn
 580 585 590
 Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
 595 600

<210> 496
 <211> 324
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 496
 Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Ala
 1 5 10 15
 Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser Leu Leu Ser Ser
 20 25 30
 Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys Leu Lys Glu Lys
 35 40 45
 Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His
 50 55 60
 Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu
 65 70 75 80
 Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val
 85 90 95
 Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe Val Leu Ile Gly
 100 105 110
 Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His Arg Asn Phe Gly
 115 120 125
 Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Gly Lys Leu
 130 135 140
 Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val Asp Thr Pro Gly
 145 150 155 160
 Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile
 165 170 175
 Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr Pro Val Ile Ile
 180 185 190
 Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Val
 195 200 205
 Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser
 210 215 220
 Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser
 225 230 235 240
 Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn Leu Lys Gln Phe
 245 250 255
 Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly Gly Ala His His
 260 265 270
 Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe Ile Ile Gln Glu
 275 280 285
 Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu Leu Glu Lys Arg
 290 295 300
 Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr Thr Ser Glu Ser
 305 310 315 320
 Gly Pro Glu Ala

<210> 497
 <211> 659
 <212> PRT

<213> Chlamydia pneumoniae

<400> 497

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Met Lys Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
 1      5      10      15
Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser
 20      25      30
Gln Met Glu Ile Phe Ser Leu Gly Met Ile Ala Lys Thr Gly Pro Asp
 35      40      45
Ala Phe Leu Leu Phe Gly Arg Lys Glu Ser Gly Lys Leu Val Lys Val
 50      55      60
Ser Glu Leu Ser Gln Lys Asp Ile Leu Glu Asn Trp Gln Ala Ile Ser
 65      70      75      80
Lys Asp Ser Glu Thr Leu Thr Val Ser Asp Ala Thr Thr Tyr Ile Ala
 85      90      95
Glu His Gly Lys Ser Thr Ala Ser Leu Thr Ser Lys Leu Ser Lys Phe
100      105      110
Val Arg Asn Tyr Ile Asp Val Ser Arg Phe Arg Gly Leu Ala Ile Phe
115      120      125
Leu Ile Cys Val Ala Ile Phe Lys Ala Val Thr Leu Phe Phe Gln Arg
130      135      140
Phe Leu Gly Gln Val Val Ala Ile Arg Val Ser Arg Asp Leu Arg Gln
145      150      155      160
Asp Tyr Phe Lys Ala Leu Gln Gln Leu Pro Met Thr Phe Phe His Asp
165      170      175
His Asp Ile Gly Asn Leu Ser Asn Arg Val Met Thr Asp Ser Ala Ser
180      185      190
Ile Ala Leu Ala Val Asn Ser Leu Met Ile Asn Tyr Ile Gln Ala Pro
195      200      205
Ile Thr Phe Ile Leu Thr Leu Gly Val Cys Leu Ser Ile Ser Trp Lys
210      215      220
Phe Ser Ile Leu Ile Cys Val Ala Phe Pro Ile Phe Ile Leu Pro Ile
225      230      235      240
Val Val Ile Ala Arg Lys Ile Lys Asn Leu Ala Lys Arg Ile Gln Lys
245      250      255
Ser Gln Asp Ser Phe Ser Ser Val Leu Tyr Asp Phe Leu Ala Gly Val
260      265      270
Met Thr Val Lys Val Phe Arg Thr Glu Lys Phe Ala Phe Thr Lys Tyr
275      280      285
Cys Glu His Asn Asn Lys Ile Ser Ala Leu Glu Glu Lys Ser Ala Ala
290      295      300
Tyr Gly Leu Leu Pro Arg Pro Leu Leu His Thr Ile Ala Ser Leu Phe
305      310      315      320
Phe Ala Phe Val Val Ile Gly Ile Tyr Lys Phe Ala Ile Pro Pro
325      330      335
Glu Glu Leu Ile Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr Asp Pro
340      345      350
Ile Lys Lys Phe Gly Asp Glu Asn Thr Ser Ile Met Arg Gly Cys Ala
355      360      365
Ala Ala Glu Arg Phe Tyr Glu Val Leu Asn His Pro Asp Leu His Ser
370      375      380
Gln Lys Glu Arg Glu Ile Glu Phe Leu Gly Leu Ser Asn Thr Ile Thr
385      390      395      400
Phe Glu Asn Val Ser Phe Gly Tyr Gln Glu Asp Lys His Ile Leu Lys
405      410      415
Asn Leu Ser Phe Thr Leu His Lys Gly Glu Ala Leu Gly Ile Val Gly
420      425      430
Pro Thr Gly Ser Gly Lys Thr Thr Leu Val Lys Leu Leu Pro Arg Leu
435      440      445
Tyr Glu Val Ser Gln Gly Lys Ile Leu Ile Asp Ser Leu Pro Ile Thr
450      455      460

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Glu Tyr Asn Lys Gly Ser Leu Arg Asn His Ile Ala Cys Val Leu Gln
 465 470 475 480
 Asn Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys Gly
 485 490 495
 Lys Asp Met Glu Glu Ala Val Leu Glu Ala Leu Lys Arg Ala Tyr
 500 505 510
 Ala Asp Glu Phe Ile Leu Lys Leu Pro Lys Gly Val His Ser Val Leu
 515 520 525
 Glu Glu Ser Gly Lys Asn Leu Ser Gly Gly Gln Gln Arg Leu Ala
 530 535 540
 Ile Ala Arg Ala Leu Leu Lys Asn Ala Ser Ile Leu Ile Leu Asp Glu
 545 550 555 560
 Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Ile Lys Asn Ile
 565 570 575
 Ile Gly Glu Leu Lys Gly Gln Cys Thr Gln Ile Ile Ala His Lys
 580 585 590
 Leu Thr Thr Leu Glu His Val Asp Arg Val Leu Tyr Ile Glu Asn Gly
 595 600 605
 Gln Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Gln Thr Cys Pro
 610 615 620
 Glu Phe Leu Lys Met Trp Glu Leu Ser Gly Thr Lys Glu Tyr Asn Arg
 625 630 635 640
 Val Phe Val Pro Asp His Lys Leu Val Ala Asn Pro Thr Asp Met Ala
 645 650 655
 Ile Thr Thr

<210> 498

<211> 411

<212> PRT

<213> Chlamydia pneumoniae

<400> 498

Met Ile Pro Thr Met Leu Met Phe Phe Ile Ile Cys Phe Thr Leu Cys
 1 5 10 15
 Ser Gly Phe Ile Ser Leu Ser Gln Ile Ala Leu Phe Ser Leu Pro Thr
 20 25 30
 Ser Leu Ile Ser His Tyr Lys Arg Ser Lys Ser Lys Lys Gln Gln Arg
 35 40 45
 Val Ala Thr Leu Leu Leu His Pro His His Leu Leu Ile Thr Leu Ile
 50 55 60
 Phe Cys Asp Ile Gly Leu Asn Ile Ala Ile Gln Asn Cys Phe Ala Ile
 65 70 75 80
 Leu Phe Gly Asp Ala Ala Ser Trp Trp Phe Thr Val Gly Leu Pro Leu
 85 90 95
 Ala Ile Thr Leu Ile Leu Gly Glu Ile Leu Pro Lys Ala Val Ala Leu
 100 105 110
 Pro Phe Asn Thr Gln Ile Ala Ser Val Ala Pro Leu Ile Leu Cys
 115 120 125
 Val Thr Lys Ile Phe Lys Pro Leu Leu His Trp Gly Ile Val Gly Ile
 130 135 140
 Asn Tyr Val Val Gln Trp Ile Leu Ser Lys Gln Gln Ile Asp Ile Ile
 145 150 155 160
 Gln Pro Gln Glu Leu Lys Glu Val Leu Gln Ser Cys Lys Asp Phe Gly
 165 170 175
 Val Val Asn Gln Glu Glu Ser Arg Leu Leu Tyr Gly Tyr Leu Ser Leu
 180 185 190
 Ser Asp Cys Ser Val Lys Glu Arg Met Gln Pro Arg Gln Asp Ile Leu
 195 200 205
 Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu Leu Phe Ser
 210 215 220

Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn Leu Gln Asn
 225 230 235 240
 Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu His Asp Lys Pro
 245 250 255
 Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys Pro Tyr Tyr
 260 265 270
 Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln Met Ala Ala
 275 280 285
 Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly Ser Ile Glu
 290 295 300
 Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala Gly Glu Ile
 305 310 315 320
 Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser Gly Ala Asp
 325 330 335
 Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe Ser Glu Ile
 340 345 350
 Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr Ile Gly Gly
 355 360 365
 Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly Met Lys Leu
 370 375 380
 Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala Pro Asn Arg
 385 390 395 400
 Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
 405 410

<210> 499

<211> 404

<212> PRT

<213> Chlamydia pneumoniae

<400> 499

Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 1 5 10 15
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
 20 25 30
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
 35 40 45
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
 50 55 60
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
 65 70 75 80
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
 85 90 95
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr
 100 105 110
 Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile
 115 120 125
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
 130 135 140
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
 145 150 155 160
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
 165 170 175
 His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
 180 185 190
 Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val
 195 200 205
 Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile
 210 215 220
 Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys
 225 230 235 240

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Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn Lys Ala Leu
      245      250      255
Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe Ile Thr Ala
      260      265      270
Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp Asn Arg Ser
      275      280      285
Ser Val Ala Val Val Leu Asn Ala Ser Gly Glu Pro Ile Gly Ile Leu
      290      295      300
Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr Asn Ile Ala
      305      310      315
His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr Phe Pro Gly
      320      325      330
Asn Ser Arg Ile Lys Asp Leu Gln Lys Glu Leu Asp Ile Gln Phe Pro
      335      340      345
Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln Leu Leu Asp
      350      355      360
Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn Leu Leu Leu
      365      370      375
Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val Ser Ile Lys
      380      385      390      395      400
Asn Leu Leu Ser

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<210> 500

<211> 543

<212> PRT

<213> Chlamydia pneumoniae

<400> 500

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Met Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe
  1      5      10      15
Ala Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr
      20      25      30
Ser Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser
      35      40      45
Ser Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr
      50      55      60
Pro Glu Leu Ala His Asp Arg Asp Val Leu Glu Glu Phe Gly Ile Gln
      65      70      75      80
Val Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val
      85      90      95
Ser Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu
      100      105      110
Leu Leu Gln Ser Cys Asn Asp Asp Ser Ala Ile Val Arg Ser Leu Ala
      115      120      125
Leu Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile
      130      135      140
Val Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala
      145      150      155      160
Tyr Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu
      165      170      175
Arg Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu
      180      185      190
Ala Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly
      195      200      205
Val Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu
      210      215      220
Arg Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu
      225      230      235      240
Ser Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu
      245      250      255

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Ale	Trp	Ser	His	Gln	Leu	Gln	Asn	Lys	Glu	Phe	Leu	Ser	Lys	Val		
Arg	His	Val	Met	Cys	Thr	Ser	Pro	Phe	Ala	Lys	Val	Arg	Phe	Gln	Ala	
Ala	Ala	Leu	Leu	His	Leu	His	295	Gly	Asp	Pro	Leu	Gly	Arg	Asp	Ser	Leu
Val	Glu	Gly	Leu	Arg	Ser	Pro	Gly	Pro	Leu	Val	Cys	Glu	Ala	Ala	Ser	320
Ala	Ala	Leu	Cys	Ser	Leu	Gly	Ile	His	Gly	Val	Pro	Lys	Ala	Lys	335	320
His	Leu	Glu	Ser	Leu	Ser	Ser	Arg	Lys	Ala	Val	Ala	Asn	Leu	Ser	Ile	335
Leu	Leu	Leu	Val	Ser	Arg	Glu	Asp	Ile	Glu	Arg	Ala	Gly	Asp	Val	Ile	350
Ala	Arg	Tyr	Leu	Ser	Asn	Pro	Glu	Met	Cys	Trp	Ala	Ile	Glu	Tyr	Phe	365
Leu	Trp	Asp	Ala	Gln	Trp	Asn	Leu	Arg	Gly	Asp	Thr	Phe	Pro	Leu	Tyr	400
Ser	Asp	Met	Ile	Lys	Arg	Glu	Ile	Gly	Arg	Lys	Leu	Ile	Arg	Leu	Leu	415
Ala	Val	Ala	Arg	Tyr	Ser	Gln	Ala	Lys	Ala	Val	Thr	Ala	Thr	Phe	Leu	430
Ser	Gly	Gln	Gln	Ala	Gln	Gly	Trp	Ser	Phe	Phe	Ser	Gly	Met	Phe	Trp	445
Glu	Glu	Gly	Asp	Val	Lys	Thr	Ser	Glu	Asp	Leu	Val	Thr	Asp	Ala	Cys	460
Phe	Ala	Ala	Lys	Leu	Glu	Gly	Ala	Leu	Ala	Ser	Leu	Cys	Gln	Lys	Lys	480
Asp	Gln	Ala	Ser	Leu	Gln	Arg	Val	Ser	Gln	Leu	Tyr	Asn	Asp	Ser	Arg	495
Trp	Gln	Asp	Lys	Leu	Ala	Ile	Leu	Glu	Ser	Val	Ala	Phe	Ser	Glu	Asn	510
Leu	Asp	Ala	Val	Pro	Phe	Leu	Leu	Asp	Cys	Cys	His	His	Glu	Ala	Pro	525
Ser	Leu	Arg	Ser	Ala	Ala	Ala	Gly	Ala	Leu	Phe	Ser	Ile	Phe	Lys		540

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<210> 501
<211> 103
<212> PRT
<213> Chlamydia pneumoniae
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400> 501
Met Ser Phe Lys Arg Phe Leu Gln Gln Ile Pro Val Arg Ile Cys Leu
1      5      10      15
Leu Ile Ile Tyr Leu Tyr Gln Trp Leu Ile Ser Pro Leu Leu Gly Ser
20      25      30
Cys Cys Arg Phe Phe Pro Ser Cys Ser His Tyr Ala Glu Gln Ala Leu
35      40      45
Lys Ser His Gly Phe Leu Met Gly Cys Trp Leu Ser Ile Lys Arg Ile
50      55      60
Gly Lys Cys Gly Pro Trp His Pro Gly Gly Ile Asp Met Val Pro Lys
65      70      75      80
Thr Ala Leu Gln Glu Val Leu Glu Pro Tyr Gln Glu Ile Asp Gly Gly
85      90      95
Asp Ser Ser His Phe Ser Glu
100

```

<210>	502
<211>	362
<212>	PRT

<213> Chlamydia pneumoniae

<400> 502

```

Met Ala Phe Lys Arg Lys Thr Arg Trp Leu Trp Gln Val Leu Ile Leu
1      5      10      15
Ser Val Gly Leu Asn Met Leu Phe Leu Leu Leu Phe Tyr Ser Ala Ile
20      25      30
Phe Arg Lys Asp Ile Tyr Lys Leu His Leu Phe Ser Gly Pro Leu Ile
35      40      45
Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser Glu Asp Phe Leu Asn Glu
50      55      60
Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile Ser Leu Phe Lys Asp Glu
65      70      75      80
Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu Trp Ala Leu Ser Val Ala
85      90      95
Ile Ala Ser His His Ile Asp Ile Thr Pro Val Leu Ser Lys Pro Leu
100     105
Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val Arg Trp Leu Leu Pro Asn
115     120     125
Ile Asp Leu Lys Asp Phe Pro Val Ile Leu Asp Tyr Leu Arg Cys His
130     135     140
Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe Leu Leu Ile Glu Lys Met
145     150     155     160
Val Gln Glu Gly Trp Val Asp Glu Asp Cys Leu Tyr His Phe Cys Ser
165     170     175
Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu Leu Val Gly Ala Asp Val
180     185     190
Gln Ala Ser Ser Val Ala Ser Leu Ala Arg Met Val Ile Arg Cys Gly
195     200
Ser Glu Arg Phe Phe His Phe Cys Asn Glu Glu Ser Arg Thr Ser Met
210     215     220
Ile Ser Ala Thr Gln Arg Gln Lys Val Leu Lys Ser Tyr Leu Asp Cys
225     230     235     240
Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu Val His Asp Ser Asp Val
245     250     255
Val Leu His Glu Phe Cys Asp Glu Asp Leu Glu Lys Val Ile Arg Leu
260     265     270
Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn Phe Phe Ser Arg Leu Gln
275     280     285
His Ser Pro Arg Arg Glu Leu Ala Cys Met Ser Thr Gln Arg Val Glu
290     295     300
Ala Pro Arg Val Gln Glu Asp Gln Asp Glu Glu Tyr Val Val Gln Asp
305     310     315     320
Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg Phe Gly Ile Pro Met Asp
325     330     335
Lys Ile Ile Gln Lys Asn Gly Leu Asn His His Arg Leu Phe Pro Gly
340     345     350
Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
355     360

```

<210> 503

<211> 582

<212> PRT

<213> Chlamydia pneumoniae

<400> 503

```

Met Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile Phe Val Pro Leu
1      5      10      15
Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln Ile Leu Leu Asp
20      25      30
Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu Thr Val Cys Trp

```

Val	35	Thr	Leu	Asn	Ser	40	Asn	Ser	Ala	Lys	45	Phe	Pro	Pro	Phe
50	Leu	Tyr	Leu	Cys	Leu	55	Leu	Arg	Leu	Gly	60	Asn	Leu	Ala	Ser
65	Leu	Tyr	Leu	Cys	Leu	70	Leu	Arg	Leu	Gly	75	Asn	Leu	Ala	Ser
Arg	Trp	Ile	Val	Ser	Ser	85	Gly	Thr	Ala	Ser	90	Ser	Leu	Ile	Val
Gly	Ser	Phe	Phe	Ser	Leu	100	Gly	Ser	Leu	Trp	105	Ala	Ala	Thr	Phe
Leu	Leu	Leu	Phe	Phe	Val	115	Asn	Phe	Leu	Met	120	Val	Ser	Lys	Gly
Arg	Ile	Ala	Glu	Val	Arg	130	Ser	Arg	Phe	Phe	135	Leu	Glu	Ala	Leu
Lys	Gln	Met	Ala	Leu	Asp	145	Ser	Asp	Leu	Val	150	Ser	Gly	Arg	Ala
Lys	Ala	Val	Lys	Lys	Gln	160	Lys	Asn	Ala	Leu	165	Ile	Glu	Glu	Gly
Phe	Ser	Ala	Met	Glu	Gly	170	Gly	Val	Phe	Arg	175	Phe	Lys	Gly	Asp
Ile	Ser	Cys	Ile	Leu	Leu	180	Leu	Val	Asn	Val	185	Val	Ser	Val	Thr
Tyr	Tyr	Thr	Ser	Gly	Tyr	195	Ala	Leu	Gln	Met	200	Trp	Phe	Thr	Val
Gly	Asp	Ala	Leu	Val	Ser	210	Gln	Val	Pro	Ala	215	Leu	Leu	Thr	Ser
225	Ala	Ala	Thr	Leu	Ile	230	Ser	Lys	Ile	Asp	235	Glu	Glu	Ser	Leu
Ala	Ala	Thr	Leu	Ile	Ser	245	Ser	Lys	Ile	Asp	250	Glu	Glu	Ser	Leu
Tyr	Leu	Phe	Glu	Tyr	Tyr	260	Lys	Gln	Leu	Arg	265	Gln	His	Pro	Arg
Ser	Leu	Leu	Ile	Phe	Ser	275	Leu	Cys	Cys	Ile	280	Pro	Ser	Ser	Pro
Pro	Ile	Val	Leu	Leu	Ala	290	Ser	Leu	Leu	Trp	295	Leu	Ala	Tyr	Arg
Glu	Pro	Ala	Ser	Glu	Asp	305	Ser	Cys	Ile	Glu	310	Arg	Ala	Phe	Ser
Glu	Gly	Ala	Cys	Pro	Lys	320	Glu	Gln	Glu	Ser	325	Gln	Phe	Tyr	Gln
Arg	Ala	Ala	Ser	Glu	Glu	335	Val	Phe	Glu	Asp	340	Leu	Gly	Val	Arg
Val	Leu	Thr	Ser	Leu	Arg	350	Ile	Glu	Glu	Arg	355	Pro	Trp	Leu	Arg
Gly	Gln	Asn	Val	Tyr	Leu	360	Asp	Glu	Met	Thr	365	Pro	Glu	Ala	Val
370	Leu	Arg	Asn	Ile	Ala	375	His	Glu	Ala	Leu	380	Asn	Ala	Glu	Val
Phe	Leu	Asn	Asn	Ile	Ala	385	His	Glu	Ala	Leu	390	Asn	Ala	Glu	Val
Lys	Tyr	Leu	Glu	Glu	Ser	400	Ser	His	Glu	Arg	405	Gly	Ile	Ala	Val
Ile	Val	Pro	Lys	Lys	Ile	410	Ser	Leu	Ser	Ser	415	Leu	Val	Val	Leu
Leu	Leu	Val	Arg	Glu	Arg	420	Val	Ser	Leu	Lys	425	Leu	Phe	Pro	Lys
Glu	Ala	Val	Ala	Val	Tyr	430	Gln	Asn	Ser	Gly	435	Ser	Leu	Glu	Ile
440	Glu	Lys	Val	Arg	Lys	445	Ser	Leu	Gly	Tyr	450	Trp	Ile	Gly	Arg
Ala	Glu	Lys	Val	Arg	Lys	455	Ser	Leu	Gly	Tyr	460	Trp	Ile	Gly	Arg
465	Trp	Asp	Gln	Lys	Gln	470	Thr	Leu	Glu	Val	475	Ile	Thr	Ile	Asp
Glu	Glu	Leu	Ile	Asn	Ser	480	Ser	Tyr	Ser	Lys	485	Ser	Asn	Pro	Val
Glu	Asn	Val	Ile	Arg	Arg	490	Val	Asp	Ser	Leu	500	Leu	Glu	Arg	Ser
510	Val	Ile	Arg	Arg	Val	515	Asp	Ser	Leu	Leu	520	Glu	Glu	Arg	Ser

Lys Asp Phe Arg Ala Ile Val Thr Ser Cys Glu Thr Arg Phe Glu Met
 530 535 540
 Lys Lys Met Leu Asp Pro His Phe Pro Asp Leu Val Leu Ser His
 545 550 555 560
 Asp Glu Leu Pro Lys Glu Ile Pro Ile Ser Phe Leu Gly Ile Val Ser
 565 570 575
 Asp Glu Val Leu Val Pro
 580

<210> 504
 <211> 435
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 504
 Met Phe Ser Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr
 1 5 10 15
 Gly Cys Ser Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Pro
 20 25 30
 Ile His Asp Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala
 35 40 45
 Met Asp Leu Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu
 50 55 60
 Thr His Arg Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr
 65 70 75 80
 Thr Val Ser Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser
 85 90 95
 Ala Leu Trp Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn
 100 105 110
 Ala Trp Glu Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln
 115 120 125
 Gly Leu Asn Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu
 130 135 140
 Asp Ser Pro Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe
 145 150 155 160
 Ala Ile Phe Lys Pro Glu Asn Pro Lys Leu Phe Ser Gly Pro Tyr Thr
 165 170 175
 Leu Val Glu Tyr Phe Pro Gly His Asn Ile His Leu Lys Lys Asn Pro
 180 185 190
 Asn Tyr Tyr Asp Tyr His Cys Val Ser Ile Asn Ser Ile Lys Leu Leu
 195 200 205
 Ile Ile Pro Asp Ile Tyr Thr Ala Ile His Leu Leu Asn Arg Gly Lys
 210 215 220
 Val Asp Trp Val Gly Gln Pro Trp His Gln Gly Ile Pro Trp Glu Leu
 225 230 235 240
 His Lys Gln Ser Gln Tyr His Tyr Tyr Thr Tyr Pro Val Glu Gly Ala
 245 250 255
 Phe Trp Leu Cys Leu Asn Thr Lys Ser Pro His Leu Asn Asp Leu Gln
 260 265 270
 Asn Arg His Arg Leu Ala Thr Cys Ile Asp Lys Arg Ser Ile Ile Glu
 275 280 285
 Glu Ala Leu Gln Gly Thr Gln Gln Pro Ala Glu Thr Leu Ser Arg Gly
 290 295 300
 Ala Pro Gln Pro Asn Gln Tyr Lys Lys Gln Lys Pro Leu Thr Pro Gln
 305 310 315 320
 Glu Lys Leu Val Leu Thr Tyr Pro Ser Asp Ile Leu Arg Cys Gln Arg
 325 330 335
 Ile Ala Glu Ile Leu Lys Glu Gln Trp Lys Ala Ala Gly Ile Asp Leu
 340 345 350
 Ile Leu Glu Gly Leu Glu Tyr His Leu Phe Val Asn Lys Arg Lys Val
 355 360 365

Gln Asp Tyr Ala Ile Ala Thr Gln Thr Gly Val Ala Tyr Tyr Pro Gly
 370 375 380
 Ala Asn Leu Ile Ser Glu Glu Asp Lys Leu Leu Gln Asn Phe Glu Ile
 385 390 395 400
 Ile Pro Ile Tyr Tyr Leu Ser Tyr Asp Tyr Leu Thr Gln Asp Phe Ile
 405 410 415
 Glu Gly Val Ile Tyr Asn Ala Ser Gly Ala Val Asp Leu Lys Tyr Thr
 420 425 430
 Tyr Phe Pro
 435

<210> 505
 <211> 171
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 505
 Met Lys Lys Leu Leu Phe Ser Thr Phe Leu Leu Val Leu Gly Ser Thr
 1 5 10 15
 Ser Ala Ala His Ala Asn Leu Gly Tyr Val Asn Leu Lys Arg Cys Leu
 20 25 30
 Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu Glu Ala Met
 35 40 45
 Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu Glu Leu Thr
 50 55 60
 Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu Ser Leu Ser
 65 70 75 80
 Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp Leu Ser Gly
 85 90 95
 Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile Asn Gln Ser
 100 105 110
 Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala
 115 120 125
 Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu
 130 135 140
 Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile
 145 150 155 160
 Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 165 170

<210> 506
 <211> 360
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 506
 Met Ser Glu Ala Pro Val Tyr Thr Leu Lys Gln Leu Ala Glu Leu Leu
 1 5 10 15
 Gln Val Glu Val Gln Gly Asn Ile Glu Thr Pro Ile Ser Gly Val Glu
 20 25 30
 Asp Ile Ser Gln Ala Gln Pro His His Ile Ala Phe Leu Asp Asn Glu
 35 40 45
 Lys Tyr Ser Ser Phe Leu Lys Asn Thr Lys Ala Gly Ala Ile Ile Leu
 50 55 60
 Ser Arg Ser Gln Ala Met Gln His Ala His Leu Lys Lys Asn Phe Leu
 65 70 75 80
 Ile Thr Asn Glu Ser Pro Ser Leu Thr Phe Gln Lys Cys Ile Glu Leu
 85 90 95
 Phe Ile Glu Pro Val Thr Ser Gly Phe Pro Gly Ile His Pro Thr Ala
 100 105 110
 Val Ile His Pro Thr Ala Arg Ile Glu Lys Asn Val Thr Ile Glu Pro

```

      115              120              125
Tyr Val Val Ile Ser Gln His Ala His Ile Gly Ser Asp Thr Tyr Ile
   130              135              140
Gly Ala Gly Ser Val Ile Gly Ala His Ser Val Leu Gly Ala Asn Cys
   145              150              155
Leu Ile His Pro Lys Val Val Ile Arg Glu Arg Val Leu Met Gly Asn
   165              170              175
Arg Val Val Val Gln Pro Gly Ala Val Leu Gly Ser Cys Gly Phe Gly
   180              185              190
Tyr Ile Thr Asn Ala Phe Gly His His Lys Pro Leu Lys His Leu Gly
   195              200              205
Tyr Val Ile Val Gly Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile
   210              215              220
Asp Arg Gly Arg Phe Lys Asn Thr Val Ile His Glu Gly Thr Lys Ile
   225              230              235
Asp Asn Gln Val Gln Val Ala His His Val Glu Ile Gly Lys His Ser
   245              250              255
Ile Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Glu
   260              265              270
His Val Ile Ile Gly Gly Gln Thr Gly Ile Thr Gly His Ile Ser Ile
   275              280              285
Ala Asp His Val Ile Met Ile Ala Gln Thr Gly Val Thr Lys Ser Ile
   290              295              300
Thr Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu
   305              310              315
Thr His Arg Leu Ile Ala Lys Ile Arg Asn Leu Pro Lys Thr Glu Glu
   325              330              335
Arg Leu Ser Lys Leu Glu Lys Gln Val Arg Asp Leu Ser Thr Pro Ser
   340              345              350
Leu Ala Glu Ile Pro Ser Glu Ile
   355              360

```

<210> 507

<211> 399

<212> PRT

<213> Chlamydia pneumoniae

<400> 507

```

Met Ala Ala Ser Gly Gly Thr Gly Gly Leu Gly Gly Thr Gln Gly Val
   1              5              10              15
Asn Leu Ala Ala Val Glu Ala Ala Ala Ala Lys Ala Asp Ala Ala Glu
   20              25              30
Val Val Ala Ser Gln Glu Gly Ser Glu Met Asn Met Ile Gln Gln Ser
   35              40              45
Gln Asp Leu Thr Asn Pro Ala Ala Ala Thr Arg Thr Lys Lys Lys Glu
   50              55              60              65
Glu Lys Phe Gln Thr Leu Glu Ser Arg Lys Lys Gly Glu Ala Gly Lys
   70              75              80
Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Pro Asp Thr Asp Leu
   85              90              95
Ala Asp Lys Tyr Ala Ser Gly Asn Ser Glu Ile Ser Gly Gln Glu Leu
   100              105              110
Arg Gly Leu Arg Asp Ala Ile Gly Asp Asp Ala Ser Pro Glu Asp Ile
   115              120              125
Leu Ala Leu Val Gln Glu Lys Ile Lys Asp Pro Ala Leu Gln Ser Thr
   130              135              140
Ala Leu Asp Tyr Leu Val Gln Thr Thr Pro Ser Ser Gln Gly Lys Leu
   145              150              155
Lys Glu Ala Leu Ile Gln Ala Arg Asn Thr His Thr Glu Gln Phe Gly
   165              170              175
Arg Thr Ala Ile Gly Ala Lys Asn Ile Leu Phe Ala Ser Gln Glu Tyr

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180
Ala Asp Gln Leu Asn Val Ser Pro Ser Gly Leu Arg Ser Leu Tyr Leu
195
Glu Val Thr Gly Asp Thr His Thr Cys Asp Gln Leu Leu Ser Met Leu
210
Gln Asp Arg Tyr Thr Tyr Gln Asp Met Ala Ile Val Ser Ser Phe Leu
225
Met Lys Gly Met Ala Thr Glu Leu Lys Arg Gln Gly Pro Tyr Val Pro
245
Ser Ala Gln Leu Gln Val Leu Met Thr Glu Thr Arg Asn Leu Gln Ala
260
Val Leu Thr Ser Tyr Asp Tyr Phe Glu Ser Arg Val Pro Ile Leu Leu
275
Asp Ser Leu Lys Ala Glu Gly Ile Gln Thr Pro Ser Asp Leu Asn Phe
290
Val Lys Val Ala Glu Ser Tyr His Lys Ile Ile Asn Asp Lys Phe Pro
305
Thr Ala Ser Lys Val Glu Arg Glu Val Arg Asn Leu Ile Gly Asp Asp
325
Val Asp Ser Val Thr Gly Val Leu Asn Leu Phe Phe Ser Ala Leu Arg
340
Gln Thr Ser Ser Arg Leu Phe Ser Ser Ala Asp Lys Arg Gln Gln Leu
355
Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn Glu
370
Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
385
390
395

```

<210> 508

<211> 224

<212> PRT

<213> Chlamydia pneumoniae

<400> 508

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Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
1
Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
20
Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
35
Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
50
Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
65
Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
85
Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
100
Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
115
Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
130
Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
145
Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
165
Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
180
Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
195
Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
200
205

```

210 215 220

<210> 509
 <211> 246
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 509
 Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr Asp Asp
 1 5 10 15
 Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu Arg Ser
 20 25 30
 Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
 35 40 45
 Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln Glu Ala
 50 55 60
 Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr Lys Lys
 65 70 75
 Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Val Glu
 85 90 95
 Gly Tyr Phe Val Leu Tyr Pro Arg Asp Phe Leu Leu Ser Val Asn Thr
 100 105 110
 Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys Gly Ile
 115 120 125
 Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr Met Gly
 130 135 140
 Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr Val Gly
 145 150 155 160
 Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser Asn Leu
 165 170 175
 Leu Asp Gly Leu Ser Ala Ala Ala Val Leu Cys Met Gly Glu Gly Asp
 180 185 190
 Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile Thr Phe
 195 200 205
 His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala Ile Ala
 210 215 220
 Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala Trp Glu
 225 230 235 240
 Thr Pro Ala Pro Thr Ser
 245

<210> 510
 <211> 353
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 510
 Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile Ser
 1 5 10 15
 Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp Thr
 20 25 30
 Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn Gln
 35 40 45
 Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His Ala
 50 55 60
 Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys Ile
 65 70 75 80
 Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr Ile
 85 90 95
 Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser Asn
 100 105 110

Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His Gln
 115 120 125
 Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala Asn
 130 135 140
 Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly Met
 145 150 155
 His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly Asp
 165 170 175
 Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln Asp
 180 185 190
 Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala Gln
 195 200 205
 Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile Ile
 210 215 220
 Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile Ile
 225 230 235
 Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln Leu
 245 250 255
 Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr Leu
 260 265 270
 His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly Ser
 275 280 285
 Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu Ile
 290 295 300
 Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met Ile
 305 310 315
 Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp Glu
 325 330 335
 Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu Ala
 340 345 350
 Ala

<210> 511
 <211> 186
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 511
 Met Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys Val
 1 5 10 15
 Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile Lys
 20 25 30
 Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu Val
 35 40 45
 Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly Lys
 50 55 60
 Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala Gln
 65 70 75 80
 His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp Glu
 85 90 95
 Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu Lys
 100 105 110
 Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu Ala
 115 120 125
 Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly Leu
 130 135 140
 Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg Ser
 145 150 155
 Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys Gln
 165 170 175

Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210> 512

<211> 276

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> 269,270,271,272,274,275,276

<223> Xaa = Any Amino Acid

<400> 512

Met Gly Asn Ser Gly Phe Tyr Leu Gln Asp Thr Gln Asn Thr Ile Phe
 1 5 10 15
 Ala Asp Asn Ile Arg Leu Gly Gln Met Thr Thr Val Leu Lys Lys Asp
 20 25 30
 Glu Val Ile Ile Gly Thr Asp Thr Thr Pro Thr Val Thr Phe Ser
 35 40 45
 Gly Asp Lys Gly Ile Val Ile Thr Thr Asp Ser Thr Ile Thr Pro Ser
 50 55 60
 Ser Thr Thr Phe Ser Leu Asp Met Glu Ala Val Ile Lys Glu Val Thr
 65 70 75 80
 Asp Lys Ile Leu Thr Gln Ile Glu Asp Glu Leu Val Lys Asp Ile Ile
 85 90 95
 Lys Asn Ile Thr Gln Ser Leu Ile Glu Glu Val Ile Lys Lys Ile His
 100 105 110
 Ile Asp Pro Ser Phe Ser Tyr Ser Arg Ala Phe Lys Asp Val Asn Ile
 115 120 125
 Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Lys Glu Asn Ile Gly
 130 135 140
 Asn Leu Asp Gly Gly Thr Glu Ile Ala Ser Ser Ser Val Thr Pro Asp
 145 150 155 160
 Asn Ala Asn Ser Met Phe Leu Ile Cys Ala Asp Ile Ile Ala Thr Arg
 165 170 175
 Met Glu Gly Thr Val Ala Leu Ala Leu Val Lys Glu Gly Asp Leu Ser
 180 185 190
 Pro Cys Ser Ile Ser Tyr Gly Tyr Ser Ala Gly Tyr Pro Asn Ile Ile
 195 200 205
 Ser Leu Arg Ala Thr Val Gly Asn Lys Thr Thr Ala Pro Val Lys Phe
 210 215 220
 Ser Leu Arg Ala Gly Gly Met Asp Ser Gly Val Val Trp Val Asn Ala
 225 230 235 240
 Met Pro Asn Gly Glu Lys Ile Leu Gly Val Asp Ala Val Ser Lys Ile
 245 250 255
 Thr Ile Leu Glu Val Lys Pro Gln Thr Asn Gly Thr Xaa Xaa Xaa
 260 265 270
 Phe Xaa Xaa Xaa
 275

<210> 513

<211> 1044

<212> PRT

<213> Chlamydia pneumoniae

<400> 513

Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys Arg Asn Gly
 1 5 10 15
 Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala Leu Glu Ala
 20 25 30

Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro Leu Pro Lys
 35 40 45
 Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val Val Lys Glu
 50 55 60
 Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val Glu Arg Ile
 65 70 75 80
 Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu Gln Asp Val
 85 90 95
 Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala Glu Arg Gly
 100 105 110
 Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly Gly Ser Ala
 115 120 125
 Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys Ala Phe Arg
 130 135 140
 Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr Leu Ser Glu
 145 150 155 160
 Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu Ser Leu His
 165 170 175
 Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile Val Glu Lys
 180 185 190
 Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn Tyr Ile Leu
 195 200 205
 Tyr Arg Glu Ala Arg Ala Arg Ala Asn Lys Asp Gln Asp Gly
 210 215 220
 Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val Gln Lys Glu
 225 230 235 240
 Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu Lys Arg Phe
 245 250 255
 Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser Gln Leu Leu
 260 265 270
 Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys Glu Asp Glu
 275 280 285
 Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile Glu Arg Glu
 290 295 300
 Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser Ser Leu Tyr
 305 310 315 320
 Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu Ser Glu Ile
 325 330 335
 His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu Glu Tyr Arg
 340 345 350
 Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu Ser Glu Val
 355 360 365
 Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly Val Gln Asn
 370 375 380
 Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg Leu Glu Thr
 385 390 395 400
 Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala Leu Asn Glu
 405 410 415
 Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn Leu Leu Ser
 420 425 430
 Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn Ser Gly Met
 435 440 445
 Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val Lys Asp Asp
 450 455 460
 Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu Leu Ser Lys
 465 470 475 480
 Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg Ala Thr Gly
 485 490 495
 Ala Val Ile Lys Gly Thr Asn Gly Lys Ser Gln Gly Val Ile Pro Phe
 500 505 510
 Ile Lys Val Ala Asn Asp Thr Ala Ile Ala Val Asn Gln Gly Gly Lys

515 520 525
 Arg Lys Gly Ala Met Cys Val Tyr Leu Glu Asn Trp His Leu Asp Tyr
 530 535 540
 Glu Asp Phe Leu Glu Leu Arg Lys Asn Thr Gly Asp Glu Arg Arg Arg
 545 550 555 560
 Thr His Asp Ile Asn Thr Ala Ser Trp Ile Pro Asp Leu Phe Phe Lys
 565 570 575
 Arg Leu Glu Lys Lys Gly Met Trp Thr Leu Phe Ser Pro Asp Asp Val
 580 585 590
 Pro Gly Leu His Glu Ala Tyr Gly Leu Glu Phe Glu Lys Leu Tyr Glu
 595 600 605
 Glu Tyr Glu Arg Lys Val Glu Ser Gly Glu Ile Arg Leu Tyr Lys Lys
 610 615 620
 Val Glu Ala Glu Val Leu Trp Arg Lys Met Leu Ser Met Leu Tyr Glu
 625 630 635 640
 Thr Gly His Pro Trp Ile Thr Phe Lys Asp Pro Ser Asn Ile Arg Ser
 645 650 655
 Asn Gln Asp His Val Gly Val Val Arg Cys Ser Asn Leu Cys Thr Glu
 660 665 670
 Ile Leu Leu Asn Cys Ser Glu Ser Glu Thr Ala Val Cys Asn Leu Gly
 675 680 685
 Ser Ile Asn Leu Val Glu His Ile Arg Asn Asp Lys Leu Asp Glu Glu
 690 695 700
 Lys Leu Lys Glu Thr Ile Ser Ile Ala Ile Arg Ile Leu Asp Asn Val
 705 710 715 720
 Ile Asp Leu Asn Phe Tyr Pro Thr Pro Glu Ala Lys Gln Ala Asn Leu
 725 730 735
 Thr His Arg Ala Val Gly Leu Gly Val Met Gly Phe Gln Asp Val Leu
 740 745 750
 Tyr Glu Leu Asn Ile Ser Tyr Ala Ser Gln Glu Ala Val Glu Phe Ser
 755 760 765
 Asp Glu Cys Ser Glu Ile Ile Ala Tyr Tyr Ala Ile Leu Ala Ser Ser
 770 775 780
 Leu Leu Ala Lys Glu Arg Gly Thr Tyr Ala Ser Tyr Ser Gly Ser Lys
 785 790 795 800
 Trp Asp Arg Gly Tyr Leu Pro Leu Asp Thr Ile Glu Leu Leu Lys Glu
 805 810 815
 Thr Arg Gly Glu His Asn Val Leu Val Asp Thr Ser Ser Lys Lys Asp
 820 825 830
 Trp Thr Pro Val Arg Asp Thr Ile Gln Lys Tyr Gly Met Arg Asn Ser
 835 840 845
 Gln Val Met Ala Ile Ala Pro Thr Ala Thr Ile Ser Asn Ile Ile Gly
 850 855 860
 Val Thr Gln Ser Ile Glu Pro Met Tyr Lys His Leu Phe Val Lys Ser
 865 870 875 880
 Asn Leu Ser Gly Glu Phe Thr Ile Pro Asn Thr Tyr Leu Ile Lys Lys
 885 890 895
 Leu Lys Glu Leu Gly Leu Trp Asp Ala Glu Met Leu Asp Asp Leu Lys
 900 905 910
 Tyr Phe Asp Gly Ser Leu Leu Glu Ile Glu Arg Ile Pro Asn His Leu
 915 920 925
 Lys Lys Leu Phe Leu Thr Ala Phe Glu Ile Glu Pro Glu Trp Ile Ile
 930 935 940
 Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly Val Ser Leu
 945 950 955 960
 Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser Asn Met Tyr
 965 970 975
 Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr Leu Arg Ser
 980 985 990
 Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile Asn Lys Arg
 995 1000 1005

Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile
 1010 1015 1020
 Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys
 1025 1030 1035 1040
 Glu Ser Cys Gln

<210> 514
 <211> 346
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 514
 Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val Glu Val Ser
 1 5 10 15
 Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
 Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile Glu Leu
 50 55 60
 Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln Met Thr
 145 150 155 160
 Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser Ser Glu
 165 170 175
 Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln Glu Glu
 245 250 255
 Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu Tyr Ala
 260 265 270
 Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met Ser Glu
 305 310 315 320
 Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Thr
 325 330 335
 Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
 340 345

<210> 515
 <211> 327
 <212> PRT

<213> Chlamydia pneumoniae

<400> 515

```

Met Asp Ala Lys Met Gly Tyr Ile Phe Lys Val Met Arg Trp Ile Phe
 1          5          10          15
Cys Phe Val Ala Cys Gly Ile Thr Phe Gly Cys Thr Asn Ser Gly Phe
 20          25          30
Gln Asn Ala Asn Ser Arg Pro Cys Ile Leu Ser Met Asn Arg Met Ile
 35          40          45
His Asp Cys Val Glu Arg Val Val Gly Asn Arg Leu Ala Thr Ala Val
 50          55          60
Leu Ile Lys Gly Ser Leu Asp Pro His Ala Tyr Glu Met Val Lys Gly
 65          70          75          80
Asp Lys Asp Lys Ile Ala Gly Ser Ala Val Ile Phe Cys Asn Gly Leu
 85          90          95
Gly Leu Glu His Thr Leu Ser Leu Arg Lys His Leu Glu Asn Asn Pro
100          105          110
Asn Ser Val Lys Leu Gly Glu Arg Leu Ile Ala Arg Gly Ala Phe Val
115          120          125
Pro Leu Glu Glu Asp Gly Ile Cys Asp Pro His Ile Trp Met Asp Leu
130          135          140
Ser Ile Trp Lys Glu Ala Val Ile Glu Ile Thr Glu Val Leu Ile Glu
145          150          155          160
Lys Phe Pro Glu Trp Ser Ala Glu Phe Lys Ala Asn Ser Glu Glu Leu
165          170          175
Val Cys Glu Met Ser Ile Leu Asp Ser Trp Ala Lys Gln Cys Leu Ser
180          185          190
Thr Ile Pro Glu Asn Leu Arg Tyr Leu Val Ser Gly His Asn Ala Phe
195          200          205
Ser Tyr Phe Thr Arg Arg Tyr Leu Ala Thr Pro Glu Glu Val Ala Ser
210          215          220
Gly Ala Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser Pro Glu
225          230          235          240
Ala Gln Ile Ser Val Arg Asp Ile Met Ala Val Val Asp Tyr Ile Asn
245          250          255
Glu His Asp Val Ser Val Val Phe Pro Glu Asp Thr Leu Asn Gln Asp
260          265          270
Ala Leu Lys Lys Ile Val Ser Ser Leu Lys Lys Ser His Leu Val Arg
275          280          285
Leu Ala Gln Lys Pro Leu Tyr Ser Asp Asn Val Asp Asp Asn Tyr Phe
290          295          300
Ser Thr Phe Lys His Asn Val Cys Leu Ile Thr Glu Glu Leu Gly Gly
305          310          315          320
Val Ala Leu Glu Cys Gln Arg
325

```

<210> 516

<211> 101

<212> PRT

<213> Chlamydia pneumoniae

<400> 516

```

Met Asn Asn Arg Gln Asn Thr Asn Asp Phe Ile Arg Ile Val Lys Asp
 1          5          10          15
Val Glu Lys Ala Phe Pro Glu Leu Asp Ile Lys Val Lys Ile Asp Lys
 20          25          30
Glu Lys Val Thr Phe Leu Thr Ser Pro Thr Glu Leu Tyr His Lys Ser
 35          40          45
Ile Ser Val Ile Leu Asn Leu Leu Asn Ser Ile Glu Ser Ser Leu Asp
 50          55          60
Leu Phe Pro Asp Ser Pro Val Val Glu Glu Leu Glu Lys Asn Asn Leu

```

65 70 75 80
Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp Met
 85
Phe Ser Lys Thr Glu
 90 95 100

```
<210> 517
<211> 261
<212> PRT
<213> Chlamydia pneumoniae
```

[illegible]

```
<210> 518
<211> 526
<212> PRT
<213> Chlamydia pneumoniae
```

```

<400> 518
Met Asn Val Leu Lys Tyr Thr Lys His Ser Pro Ser Ala His Ala Trp
1          5          10          15
Lys Leu Ile Gly Thr Ser Pro Lys His Gly Ile Tyr Leu Pro Leu Phe
20          25          30
Ser Ile His Thr Lys Asn Ser Cys Gly Ile Gly Glu Phe Leu Asp Leu
35          40          45
Ile Pro Leu Ile Ser Trp Cys Gln Lys Gln Gly Phe Ser Val Ile Gln
50          55          60

```

Leu Leu Pro Leu Asn Asp Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser
 65 70 75 80
 Ile Ser Ser Val Ala Leu Asn Pro Leu Phe Leu Ser Ser Ser Leu
 85 90 95
 Pro Asn Ile Asp Thr Ile Pro Glu Val Ala Lys Lys Leu Gln Asp Met
 100 105 110
 His Glu Leu Cys Ser Thr Pro Ser Val Ser Tyr Thr Gln Val Lys Glu
 115 120 125
 Lys Lys Trp Ala Phe Leu Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser
 130 135 140
 Ser Leu Glu Gly Asn Ser Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg
 145 150 155 160
 Tyr Trp Leu Tyr Pro Tyr Gly Thr Phe Arg Ala Ile Lys His His Met
 165 170 175
 His Gly Glu Pro Ile Asn Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu
 180 185 190
 Asn Phe Pro Asp Leu Thr Lys Lys Phe His Asp Glu Val Leu Phe Phe
 195 200 205
 Ser Tyr Leu Gln Phe Leu Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala
 210 215 220
 Tyr Ala Asp Gln His His Val Leu Leu Lys Gly Asp Leu Pro Ile Leu
 225 230 235 240
 Ile Ser Lys Asp Ser Cys Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser
 245 250 255
 Ser Ser Arg Ser Val Gly Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly
 260 265 270
 Gln Asn Trp His Leu Pro Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp
 275 280 285
 Asp Tyr Ile Trp Trp Lys Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr
 290 295 300
 Ser Val Tyr Arg Leu Asp His Ile Ile Gly Phe Phe Arg Leu Trp Ile
 305 310 315 320
 Trp Asp Ser Ser Gly Arg Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp
 325 330 335
 Tyr Ile Lys Gln Gly Thr Glu Ile Leu Ser Thr Met Leu Gly Ala Ser
 340 345 350
 Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Ile Ile Pro Gln Asp Val
 355 360 365
 Lys Thr Thr Leu Thr His Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg
 370 375 380
 Trp Glu Arg Asn Trp Glu Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp
 385 390 395 400
 Tyr Asn Pro Leu Ser Val Thr Thr Leu Ser Thr His Asp Ser Asp Thr
 405 410 415
 Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
 485 490 495
 Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
 500 505 510
 Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
 515 520 525

<210> 519

<211> 147

<212> PRT

<213> Chlamydia pneumoniae

<400> 519

```

Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu Ala Pro Leu Leu
 1      5'      10      15
Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys Leu Ile Arg Phe
 20      25      30
Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
 35      40      45
Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro Glu Asn Val Phe
 50      55      60
Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn Gly Ser Phe Gln
 65      70      75
Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val Thr Gln Gln Leu
 85      90      95
Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn Gly Glu Lys Leu
100     105     110
Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys Ile Trp Met Glu
115     120     125
Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val Leu Gly Ile Tyr
130     135     140
Tyr Val Ala
145

```

<210> 520

<211> 635

<212> PRT

<213> Chlamydia pneumoniae

<400> 520

```

Met Ile Pro Phe Thr Lys Thr Ile Gly Phe Arg Leu Trp Leu Ala Cys
 1      5      10      15
Ala Val Ala Ile Ile Ala Pro Leu Gly Ile Asn Ile Val Trp Leu Asn
 20      25      30
Leu Asp Gln Tyr Arg Thr Ile Val Ser Ala Ile Ser Thr Ala Leu Lys
 35      40      45
Glu Asn Ala Ala Phe Lys Ala Asn Thr Leu Thr Gln Ile Val Pro Leu
 50      55      60
Asn Val Asp Val Leu Ser Leu Phe Ser Asp Val Leu Asp Leu Asp Ala
 65      70      75
Gly Ile Pro Glu Thr Pro Asn Val Leu Leu Ser Asn Glu Met Gln Lys
 85      90      95
Val Phe Gln Gly Ile Tyr Asn Glu Ile Ser Leu Ile Lys Val Phe Pro
100     105     110
Asn Gly Asp Lys Ile Val Val Ala Ser Ser Ile Pro Glu His Leu Gly
115     120     125
Glu Asn Tyr Asn His Lys Ile Asp Ile Pro Lys Asn Thr Pro Phe Leu
130     135     140
Ala Ala Leu Lys Gln Ser Pro Lys Asn Gln Glu Val Phe Ser Val Met
145     150     155
Gln Ala Asn Val Phe Asp Ala Lys Thr Gln Glu Leu Gln Gly Ile Leu
165     170     175
Tyr Thr Thr Phe Ser Ala Glu Ser Leu Leu Lys Asp Leu Leu Ile Asn
180     185     190
Lys Gln Ser Tyr Leu Thr Val Lys Thr Ala Ile Leu Ser Lys Tyr Gly
195     200     205
Val Ile Leu Lys Ala Ser Asp Pro Ala Leu His Leu His Thr Val Tyr
210     215     220
Pro Asp Met Thr Lys Glu Lys Phe Cys Gln Val Phe Leu Asn Asp Asp
225     230     235     240

```

Pro Cys Pro Ile Asp Ser Glu Leu Gly Pro Leu Thr Leu Ser Pro Leu
 245 250 255
 Asp Ile Gly Glu Asn Phe Tyr Ser Phe Lys Ile Lys Asp Thr Glu Ile
 260 265 270
 Trp Gly Cys Ile Glu Asn Val Pro Ser Ile Asp Ile Ala Val Leu Ser
 275 280 285
 Tyr Ala Lys Lys Glu Glu Ser Phe Ala Pro Leu Trp Arg Arg Ala Arg
 290 295 300
 Met Tyr Thr Ala Tyr Phe Phe Cys Ile Leu Leu Gly Ser Leu Ile Ala
 305 310 315 320
 Phe Ile Val Ala Arg Arg Leu Ser Leu Pro Ile Arg Lys Leu Ala Thr
 325 330 335
 Ala Met Ile Glu Ser Arg Lys Asn Lys Asn Cys Leu Tyr Thr Asp Asp
 340 345 350
 Ser Leu Gly Phe Glu Ile Asn Arg Leu Gly His Ile Phe Asn Ala Met
 355 360 365
 Val Glu Asn Leu His Lys Gln Gln His Leu Ala Lys Thr Asn Phe Glu
 370 375 380
 Met Lys Glu Asn Ala Gln Asn Ala Leu His Leu Gly Glu Gln Ala Gln
 385 390 395 400
 Gln Arg Leu Leu Pro Asn Thr Leu Pro Ser Tyr Pro His Ile Glu Leu
 405 410 415
 Ala Lys Ala Tyr Ile Pro Ala Ile Thr Val Gly Gly Asp Phe Phe Asp
 420 425 430
 Val Phe Val Val Gly Glu Gly Ser Lys Ala Arg Leu Phe Leu Ile Val
 435 440 445
 Ala Asp Ala Ser Gly Lys Gly Val Asn Ala Cys Gly Tyr Ser Leu Phe
 450 455 460
 Leu Lys Asn Met Leu Arg Thr Phe Leu Ser Arg Ser Ser Leu Gln
 465 470 475 480
 Gln Ala Ile Gln Glu Thr Ser Arg Leu Phe Tyr Asn Asn Thr Lys Asn
 485 490 495
 Ser Gly Met Phe Val Thr Leu Cys Val Tyr Cys Tyr His Gln Thr Ser
 500 505 510
 Asn Thr Met Glu Tyr Tyr Ser Cys Gly His Pro Pro Ala Cys Tyr Leu
 515 520 525
 Asp Pro Asp Gly Glu Thr Ser Trp Leu Phe His Pro Gly Met Ala Leu
 530 535 540
 Gly Phe Leu Pro Glu Val Ala Asn Ile Thr Ser Lys Leu Phe His Pro
 545 550 555 560
 Lys Pro Gly Ser Leu Phe Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala
 565 570 575
 His Asn Asn Asn Asn Asp Met Phe Gly Glu Glu Arg Leu Gln Ala Ala
 580 585 590
 Ile Gln Gly Leu Thr Gly Lys Ser Ala Ala Asp Ala Val His Arg Leu
 595 600 605
 Met Leu Ser Val Lys Thr Phe Val Gly Asn Ser His Gln His Asp Asp
 610 615 620
 Ile Thr Leu Leu Ile Leu Lys Val Leu Glu Ser
 625 630 635

<210> 521

<211> 314

<212> PRT

<213> Chlamydia pneumoniae

<400> 521

Met Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu Leu Ser Leu
 1 5 10 15
 Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr Ile Pro Gly
 20 25 30

Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu Glu Val Leu
 35 40 45
 Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu Tyr Gln Gln
 50 55 60
 Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe Gly Asn Ser
 65 70 75 80
 Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser Thr Ala Phe
 85 90 95
 Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu Ser Ile Gly
 100 105 110
 Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys Lys Gln
 115 120 125
 Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser Ile Pro Ala
 130 135 140
 Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val Lys Ile Pro
 145 150 155 160
 Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr Ile Leu Pro
 165 170 175
 Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile Gln Leu Thr
 180 185 190
 Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val Leu Leu Ala
 195 200 205
 Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys His Ile Leu
 210 215 220
 Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
 225 230 235 240
 Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe Cys Ile Pro
 245 250 255
 Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
 260 265 270
 Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Leu Phe Met Leu Ser
 275 280 285
 Ser Leu Leu Ser Asp Leu Ile Gln Ser Ile Ile Asp Pro Gln Ile Arg
 290 295 300
 Tyr Ala His Gly Lys Glu Lys Lys Arg Lys
 305 310

<210> 522

<211> 1240

<212> PRT

<213> Chlamydia pneumoniae

<400> 522

Met Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser Val Leu Asp
 1 5 10 15
 Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln Glu Phe Gly
 20 25 30
 Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr Gly Ala Val
 35 40 45
 Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro Ile Ile Gly
 50 55 60
 Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys Lys Lys Glu
 65 70 75 80
 Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys Lys Asn Glu
 85 90 95
 Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala Phe Thr Glu
 100 105 110
 Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu Arg Gln Tyr
 115 120 125
 Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser Val Ser
 130 135 140

Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Leu Glu Leu Gln Trp
 145 150 155 160
 Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val Gln Leu His
 165 170 175
 Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu Trp Leu Lys
 180 185 190
 Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val Asn Thr Ala
 195 200 205
 Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val Ala Thr Asn
 210 215 220
 Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His Glu Ile Leu
 225 230 235 240
 Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys Gln Asn Thr
 245 250 255
 His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg Glu Tyr Tyr
 260 265 270
 Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp Ile Pro Glu
 275 280 285
 Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp Phe Thr Phe
 290 295 300
 Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu Ser Leu Lys
 305 310 315 320
 Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala Ser Ala Val
 325 330 335
 Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys Tyr Ser Ser
 340 345 350
 Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg Asp Pro Ile
 355 360 365
 Asp Ile Val Lys Glu Arg Met Asp Met Glu Met Ala Ile Ile Ile Pro
 370 375 380
 Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile Ile His Trp
 385 390 395 400
 Ala Lys Ala Asn Gly Ile Pro Val Gly Pro Gly Arg Gly Ser Gly Ala
 405 410 415
 Gly Ser Val Leu Leu Phe Leu Leu Gly Ile Thr Glu Ile Glu Pro Ile
 420 425 430
 Arg Phe Asp Leu Phe Phe Glu Arg Phe Ile Asn Pro Glu Arg Leu Ser
 435 440 445
 Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ala Gly Arg Glu Arg Val
 450 455 460
 Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val Ala Gln Ile
 465 470 475 480
 Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Val Lys Asp Val Gly
 485 490 495
 Arg Thr Leu Asp Met Ala Leu Ser Lys Val Asn His Ile Ala Lys His
 500 505 510
 Ile Pro Asp Leu Asn Thr Thr Leu Ser Lys Ala Leu Glu Thr Asp Pro
 515 520 525
 Asp Leu His Gln Leu Tyr Ile Asn Asp Ala Glu Ser Ala Gln Val Ile
 530 535 540
 Asp Met Ala Leu Cys Leu Glu Gly Ser Ile Arg Asn Thr Gly Val His
 545 550 555 560
 Ala Ala Gly Val Ile Ile Cys Gly Asp Gln Leu Thr Asn His Ile Pro
 565 570 575
 Ile Cys Ile Ser Lys Asp Ser Thr Met Ile Thr Thr Gln Tyr Ser Met
 580 585 590
 Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Leu Leu Gly Leu
 595 600 605
 Lys Thr Leu Thr Ser Ile Asn Ile Ala Met Ser Ala Ile Glu Lys Lys
 610 615 620
 Thr Gly Gln Ser Leu Ala Met Ala Thr Leu Pro Leu Asp Asp Ala Thr

625				630				635			640				
Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	Phe	Gln	Met
				645					650					655	
Glu	Ser	Lys	Gly	Met	Gln	Glu	Leu	Ala	Lys	Asn	Leu	Arg	Pro	Asp	Leu
			660					665					670		
Phe	Glu	Glu	Ile	Ile	Ala	Met	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro	Met
		675					680					685			
Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	Glu	Ile	Ile
	690						695				700				
Glu	Tyr	Asp	His	Pro	Leu	Met	Glu	Ser	Ile	Leu	Lys	Glu	Thr	Tyr	Gly
	705					710			715					720	
Ile	Met	Val	Tyr	Gln	Glu	Gln	Val	Met	Gln	Ile	Ala	Gly	Ala	Leu	Ala
				725					730					735	
Ser	Tyr	Ser	Leu	Gly	Glu	Gly	Asp	Val	Leu	Arg	Arg	Ala	Met	Gly	Lys
			740					745					750		
Lys	Asp	Phe	Gln	Gln	Met	Glu	Gln	Glu	Arg	Glu	Lys	Phe	Cys	Lys	Arg
		755					760					765			
Ala	Cys	Asn	Asn	Gly	Ile	Asp	Pro	Glu	Leu	Ala	Thr	Val	Ile	Phe	Asp
		770				775					780				
Lys	Met	Glu	Lys	Phe	Ala	Ala	Tyr	Gly	Phe	Asn	Lys	Ser	His	Ala	Ala
	785				790				795					800	
Ala	Tyr	Gly	Leu	Ile	Thr	Tyr	Thr	Thr	Ala	Tyr	Leu	Lys	Ala	Asn	Tyr
			805					810						815	
Pro	Lys	Glu	Trp	Leu	Ala	Ala	Leu	Leu	Thr	Cys	Asp	Ser	Asp	Asp	Ile
			820					825						830	
Glu	Lys	Ile	Gly	Lys	Leu	Ile	Arg	Glu	Ala	Gln	Ser	Met	Gly	Ile	Pro
		835					840					845			
Ile	Leu	Pro	Pro	His	Ile	Asn	Val	Ser	Ser	Asn	His	Phe	Val	Ala	Thr
	850					855					860				
Asp	Glu	Gly	Ile	Arg	Phe	Ala	Met	Gly	Ala	Ile	Lys	Gly	Ile	Gly	Arg
	865				870				875					880	
Gly	Leu	Ile	Glu	Ser	Ile	Val	Glu	Glu	Arg	Asp	His	His	Gly	Pro	Tyr
			885					890						895	
Glu	Ser	Ile	Arg	Asp	Phe	Ile	Gln	Arg	Ser	Asp	Leu	Lys	Lys	Val	Ser
		900						905						910	
Lys	Lys	Ser	Ile	Glu	Ser	Leu	Ile	Asp	Ala	Gly	Cys	Phe	Asp	Cys	Phe
		915					920					925			
Asp	Ser	Asn	Arg	Asp	Leu	Leu	Leu	Ala	Ser	Val	Glu	Pro	Leu	Tyr	Glu
		930				935					940				
Ala	Ile	Ala	Lys	Asp	Lys	Lys	Glu	Ala	Ala	Ser	Gly	Val	Met	Thr	Phe
	945				950				955					960	
Phe	Thr	Leu	Gly	Ala	Met	Asp	Arg	Lys	Asn	Glu	Val	Pro	Ile	Cys	Leu
			965					970						975	
Pro	Lys	Asp	Ile	Pro	Thr	Arg	Ser	Lys	Lys	Glu	Leu	Leu	Lys	Lys	Glu
		980						985					990		
Lys	Glu	Leu	Leu	Gly	Ile	Tyr	Leu	Thr	Glu	His	Pro	Met	Asp	Thr	Val
		995					1000					1005			
Arg	Asp	His	Leu	Ser	Arg	Leu	Ser	Val	Val	Leu	Ala	Gly	Glu	Phe	Glu
	1010					1015						1020			
Asn	Leu	Pro	His	Gly	Ser	Val	Val	Arg	Thr	Val	Phe	Ile	Ile	Asp	Lys
	1025				1030					1035				1040	
Val	Thr	Thr	Lys	Ile	Ser	Ser	Lys	Ala	Gln	Lys	Lys	Phe	Ala	Val	Leu
			1045						1050					1055	
Arg	Val	Ser	Asp	Gly	Ile	Asp	Ser	Tyr	Glu	Leu	Pro	Ile	Trp	Pro	Asp
			1060					1065					1070		
Met	Tyr	Glu	Glu	Gln	Gln	Glu	Leu	Leu	Glu	Glu	Asp	Arg	Leu	Ile	Tyr
		1075					1080					1085			
Ala	Ile	Leu	Val	Leu	Asp	Lys	Arg	Ser	Asp	Ser	Leu	Arg	Ile	Ser	Cys
		1090				1095						1100			
Arg	Trp	Met	Lys	Asp	Leu	Ser	Ile	Val	Asn	Glu	Asn	Ile	Ile	Tyr	Glu
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Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln Lys Met Ser
 1125 1130 1135
 Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys Gly Asn Lys
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 Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile Leu Lys Lys
 1170 1175 1180
 Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu Val Phe Thr
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 Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp Ala Tyr Phe
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<210> 523

<211> 576

<212> PRT

<213> Chlamydia pneumoniae

<400> 523

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 20 25 30
 Leu Gln Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly
 35 40 45
 Ile Val Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile
 50 55 60
 Leu Gly Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly
 65 70 75 80
 Thr Ile Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val
 85 90 95
 Asn Gln Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys
 100 105 110
 Ala Leu Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His
 115 120 125
 Ser Val Val Lys His Leu Lys Lys Leu Asp Leu Asn Leu Ser Lys Thr
 130 135 140
 Gln Arg Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser
 145 150 155 160
 Leu Gly Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu
 165 170 175
 Lys Met Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr
 180 185 190
 Gln Glu Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu
 195 200 205
 Leu Ser Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile
 225 230 235 240
 His Thr Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val
 245 250 255
 Met Val Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile
 260 265 270
 Leu Leu Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser
 275 280 285
 Tyr Leu Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp
 290 295 300

Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln
 305 310 315 320
 Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu
 325 330 335
 Lys Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln
 340 345 350
 Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Ile Arg
 355 360 365
 Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp
 370 375 380
 Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala
 385 390 395 400
 Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys
 405 410 415
 Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile
 420 425 430
 Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
 435 440 445
 Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
 450 455 460
 Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Val Glu Gly Val
 465 470 475 480
 Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln
 485 490 495
 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
 500 505 510
 Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu
 515 520 525
 Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr
 530 535 540
 Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile
 545 550 555 560
 Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 565 570 575

<210> 524

<211> 439

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> 428, 429, 430, 431, 432, 433, 434, 435, 437, 438, 439

<223> Xaa = Any Amino Acid

<400> 524

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 Asp Leu Lys Phe His Asn Asn Glu Gly Ser Phe Tyr Asp Asn Pro Gly
 20 25 30
 Leu Lys Ala Asn Leu Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr Ser
 35 40 45
 Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met Ala
 50 55 60
 Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys Val
 65 70 75 80
 Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu Gly
 85 90 95
 Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser Leu
 100 105 110
 Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala Thr

115 120 125
 Ala Met Ser Asp Ala Pro Ser His Pro Gly Ile Trp Ile Gly Gly Ile
 130 135 140
 Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe Arg
 145 150 155 160
 Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro Gln
 165 170 175
 Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser Lys
 180 185 190
 Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser Leu
 195 200 205
 Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg Arg
 210 215 220
 His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro Leu
 225 230 235 240
 Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met Thr
 245 250 255
 Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser His
 260 265 270
 Ser Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr
 275 280 285
 Arg Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser
 290 295 300
 Val Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe
 305 310 315 320
 Asp Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe
 325 330 335
 Lys His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly
 340 345 350
 Tyr Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu
 355 360 365
 Thr Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln
 370 375 380
 Ala Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu
 385 390 395 400
 Asp Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser
 405 410 415
 Tyr Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe Xaa Xaa Xaa Xaa Xaa
 420 425 430
 Xaa Xaa Xaa Phe Xaa Xaa Xaa
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<210> 525

<211> 867

<212> DNA

<213> C. Trachomatis D serovar

<400> 525

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tacgtggatg	ttttcgctga	aatctatcag	gtccctgttt	ctcgaggatc	catgttttgc	180
gcagcgcatg	cgctcaaat	tcacacctca	atcatcgatt	ttaaattagg	ctctccagga	240
gcagctctta	ccgtagatct	gtgttctttc	cttcccaatg	ctacagcagc	gatcatgttg	300
ggcatgtgtg	gaggcttaag	atcccactac	caaataggag	attatttttg	ccctgttgct	360
agcatccgaa	aagatggaac	atcagatgca	tacttccccc	cagaggtccc	tgcattagct	420
aattttgtcg	tacaaaaaat	gatcaccaat	attctcgaag	ccaaaaacct	cccttaccat	480
ataggcatca	cccacacgac	taacattcgg	ttttgggagt	ttaatagaag	gttccgtcga	540
aaactatatg	aaaaataaag	tcaaactgtc	gagatggagt	gtgccacctt	atttgcgtca	600
ggataccgaa	ggaatatctc	tttaggagca	cttttgctga	tatcggaatc	acctttgcga	660
aaagatggaa	ttaaaaactaa	gaaaagcagt	tgggcagtc	taaaactctca	caccaaaagag	720
catatactaa	caggcgttga	ggtgtttgcc	tctctacaag	agaaatcagg	cccaggaatc	780

aagaaaacaa aaggcttgcc gcacatggag ttgggcaag ccgatgattc tctttctgaa 840
caaaactgaag ttcttgccgg ggaatttc 867

<210> 526

<211> 1182

<212> DNA

<213> C. Trachomatis D serovar

<400> 526

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ttggctgatt	ttcgtgatta	tagctctatt	gacaacactc	ctgaagaaaa	agctcgcggg	180
attacaatta	acgcttccca	cgttgagtac	gaacacagct	atcgctcacta	cgctccacgtg	240
gactgcctcg	gtcacgctga	ctatgtttaa	aacatgatca	ccggtgcagc	tcaaatggac	300
ggggctattc	tagtagtttc	tgcaacagac	ggagctatgc	ctcaaaactaa	agagcattat	360
cttttggcaa	gacaagttgg	ggttccttac	atcgttgttt	ttctcaataa	aattgacatg	420
atttccgaag	aagacgctga	attggtogac	ttagttgaga	tggagtttgt	tgagcttctt	480
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gataaagttc	agttgtgcgg	tcttagagat	actaaagaaa	cgattgttac	tggggttgaa	780
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gtgcaattga	ttagccctgt	ggctttagaa	gaaggtatga	gatttgcgat	tcgtgaaggt	1140
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<210> 527

<211> 1650

<212> DNA

<213> C. Trachomatis D serovar

<400> 527

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aatgcagagt	tgccagggcat	ggttgatcaa	gaatatgtgc	acatgatata	taagcttcat	240
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tatatctctg	ctatttgtca	agatttctat	cgaaaacttg	aggaacgcgt	actggtagag	360
aatcaggtga	ccgaacagct	gtattctgag	gaagaaggga	agtttctagc	ggaccgttat	420
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aagatatttgg	aaatgatagc	tccacatttc	ttagatctag	gttcccaaga	tccagataga	1560
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<210> 528

<211> 300

<212> DNA

<213> C. Trachomatis D serovar

<400> 528

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tacgctgaaa	gagatgatcg	agagagacat	ttgtctgcta	caggagagag	acgaagagaa	240
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<210> 529

<211> 615

<212> DNA

<213> C. Trachomatis D serovar

<400> 529

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gagatttctta	gagttctgca	aaagggtaag	cactgtatag	ccgtgattga	tgtacaagga	360
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<210> 530

<211> 1806

<212> DNA

<213> C. Trachomatis D serovar

<400> 530

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aaactcgtag	attgttatccc	tcctcagctc	tttaaaatcc	ctattcagggc	ggccatcaat	1620
aaaaagatta	ttgcccagaa	gacgatttca	gcttttagcga	aaaatgtaac	tctcaagtgc	1680
tatggtggag	atatcacaag	aaaacgcaag	ttgtgggaca	aacagaaaaa	aggggaagaaa	1740
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<210> 531

<211> 972

<212> DNA

<213> C. Trachomatis D serovar

<400> 531

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<210> 532

<211> 1938

<212> DNA

<213> C. Trachomatis D serovar

<400> 532

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<210> 533

<211> 1242

<212> DNA

<213> C. Trachomatis D serovar

<400> 533

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<210> 534

<211> 1212

<212> DNA

<213> C. Trachomatis D serovar

<400> 534

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<210> 535

<211> 1617

<212> DNA

<213> C. Trachomatis D serovar

<400> 535

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<210> 536

<211> 312

<212> DNA

<213> C. Trachomatis D serovar

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<210> 537

<211> 1008

<212> DNA

<213> C. Trachomatis D serovar

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<210> 538
<211> 1278
<212> DNA
<213> C. Trachomatis D serovar

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<211> 519

<212> DNA

<213> C. Trachomatis D serovar

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<210> 541

<211> 1062

<212> DNA

<213> C. Trachomatis D serovar

<400> 541

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<210> 542

<211> 1263

<212> DNA

<213> C. Trachomatis D serovar

<400> 542

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<211> 693

<212> DNA

<213> C. Trachomatis D serovar

<400> 543

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<210> 544

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<212> DNA

<213> C. Trachomatis D serovar

<400> 544

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<210> 546

<211> 579

<212> DNA

<213> C. Trachomatis D serovar

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<210> 547

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<212> DNA

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<210> 548

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<212> DNA

<213> C. Trachomatis D serovar

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<210> 550

<211> 438

<212> DNA

<213> C. Trachomatis D serovar

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<210> 551

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<212> DNA

<213> C. Trachomatis D serovar

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<211> 1950

<212> DNA

<213> C. Trachomatis D serovar

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<213> C. Trachomatis D serovar

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<213> C. Trachomatis D serovar

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<213> C. Trachomatis D serovar

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ggagcatttg	cagggcacgc	cattacccta	ctcggagtct	ctcgattttc	agggaaatacg	2940
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aatattacct	tcaatcaaaa	tacatccact	catgatggaa	gtgctatcta	ctttacaaaa	3180
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caagctagtt	ctgcaacatc	tggacaaaat	acaaatactg	ccaactatgg	ggcagccatc	3300
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tacagaataa	atcctgtctg	taaatctcgg	gtattgtctt	cgaatgaagc	tggtcagaatt	5100
atctcgggag	tgccaaactg	aaacctgtct	agagcagaat	acagtatcta	actatattct	5160
ggtcccttct	ggactctcta	cggaaactat	actatcgatg	taggcatgta	tacgctatcg	5220
caaatgacta	gctgcggtcg	tcgcatgac	ttc			5253

<210> 557

<211> 792

<212> DNA

<213> C. Trachomatis D serovar

<400> 557

atgggaaatt	ctgggttttta	ttgtataaac	actgaaaaact	gogtctttgc	tgataaatatc	60
aaagtgtggc	aaatgacaga	gcgcctcaag	gaccagcaaa	taatccttgg	gacaaaaatca	120
acacctgtcg	cagccaaaaat	gacagcttct	gatggaatat	cttttaacagt	ctccaataat	180

tcatcaacca	atgcttctat	tacaatttgg	ttggatgcgg	aaaaagctta	ccagcttatt	240
ctagaaaaag	tgggaaatca	aattcttgat	ggaattgctg	atactattgt	tgatagtaca	300
gtccaagata	tttttagacaa	aatcacaca	gaccttctc	taggtttgtt	gaaagctttt	360
aacaacttct	caatcactaa	taaaattcaa	tgcaacgggt	tattcactcc	cagtaacatt	420
gaaactttat	taggaggaac	tgaattagga	aaatlccag	tcacacccaa	aagctctggg	480
agcatgttct	tagtctcagc	agatattatt	gcatacaaga	tggaggcg	cgttgttcta	540
gctttggtac	gagaaaggta	tcttaagccc	tgccgagata	gttatggata	ctcatcagge	600
gttctaatt	tatgtagtct	aagaaccagc	attactaata	caggattgac	accaacaacg	660
tattcattac	gtgtaggcgg	tttagaaagc	gggtgtggtat	gggttaatgc	cccttctaatt	720
ggcaatgata	ttttaggaat	aacaataact	tctaattgat	cttttttgga	agtaataacct	780
caacaacacg	ct					792

<210> 558

<211> 306

<212> DNA

<213> C. Trachomatis D serovar

<400> 558

atgcaaaaa	aaagaaaagt	gagggacgat	tttattaaaa	ttgttaaaga	tgtgaaaaaa	60
gatttcccg	aatttagacct	aaaaatacga	gtaaacaaag	aaaaagtaac	tttcttaaat	120
tctcccttag	aactctacca	taaaagtgtc	tactaatttc	taggactgct	tcaacaataa	180
gaaaactctt	taggattatt	ccgacagtct	cctgttcttg	aaaaattaga	ggataaacgt	240
ttaaaagctaa	aaaaggcttt	gattatgctt	atcttgtcta	gaaaagacat	gttttccaag	300
gctgaa						306

<210> 559

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

<400> 559

gtgggatgca	acttgcccca	atttttaggg	aaaaaagtgt	tacttgccta	cctagaccgc	60
caatccaatt	tatctctctg	attgggggct	agtgtcagaa	ataacccaaa	aggcttgcac	120
gacatagtat	acaaatcaaa	cgatttaaaa	tcaatcattt	gcgaaacaaa	aaaagatagt	180
gtggacctaa	ttctgcctac	atttttatcc	gaacagttta	gagaattgga	tattcataga	240
ggacctagta	acaaacttaa	gttatttctg	aatgagtact	gcgctccttt	tattgacatc	300
tgcataatag	acactccacc	tagccttagga	gggttaacga	aagaagcttt	tgttgacaga	360
gacaaattaa	ttgcttgttt	aactccagaa	cttttttcta	ttctaggggt	acaaaagata	420
cgtaattctt	taagtctcgt	cggaaaaacct	gaagaagaac	acattctctg	aatagctttg	480
tctttttggg	atgatcgtaa	ctcgactaac	caaatgtata	tagacattat	cgagctctat	540
tacaaaaaca	agcttttttc	aacaaaaatt	cgtcgagata	tttctctcag	ccgcttctct	600
cttaagaaga	attctgttagc	taatgtctat	ccaatttcta	gggcgcgaga	agatattctg	660
aagttaacgc	atgaaatagc	aaatattttg	catatcgaat	atgaacgaga	ttactctcag	720
aggacaacg						729

<210> 560

<211> 289

<212> PRT

<213> C. Trachomatis D serovar

<400> 560

Met	Thr	His	Gln	His	Lys	Lys	Ile	Ser	Glu	Glu	Thr	Ile	Ala	Cys	Asp
1			5						10					15	
Met	Leu	Glu	Arg	Tyr	Thr	Gly	Ser	Thr	Val	Gln	Glu	Phe	Gln	Pro	Tyr
			20					25					30		
Leu	Leu	Leu	Thr	Asn	Phe	Ala	Tyr	Tyr	Val	Asp	Val	Phe	Ala	Glu	Ile
			35				40					45			
Tyr	Gln	Val	Pro	Val	Ser	Arg	Gly	Ser	Met	Phe	Ser	Ala	Ala	His	Ala
			50			55				60					
Pro	Gln	Ile	His	Thr	Ser	Ile	Ile	Asp	Phe	Lys	Leu	Gly	Ser	Pro	Gly
65					70					75				80	

Ala Ala Leu Thr Val Asp Leu Cys Ser Phe Leu Pro Asn Ala Thr Ala
 85 90 95
 Ala Ile Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Ile
 100 105 110
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Lys Asp Gly Thr Ser
 115 120 125
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 130 135 140
 Gln Lys Met Ile Thr Asn Ile Leu Glu Ala Lys Asn Leu Pro Tyr His
 145 150 155
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 165 170 175
 Glu Phe Arg Arg Lys Leu Tyr Glu Asn Lys Ala Gln Thr Val Glu Met
 180 185 190
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Leu
 195 200 205
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Asp Gly Ile
 210 215 220
 Lys Thr Lys Glu Ser Ser Ser Ala Val Leu Asn Ser His Thr Lys Glu
 225 230 235
 His Ile Leu Thr Gly Val Glu Val Phe Ala Ser Leu Gln Glu Lys Ser
 245 250 255
 Gly Pro Gly Ile Lys Lys Thr Lys Gly Leu Pro His Met Glu Phe Gly
 260 265 270
 Gln Ala Asp Asp Ser Leu Ser Glu Gln Thr Glu Val Ser Gly Gly Asp
 275 280 285
 Phe

<210> 561

<211> 394

<212> PRT

<213> C. Trachomatis D serovar

<400> 561

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Ala Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205

Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Arg Asp Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Leu Pro Asn Ser Val Lys Pro His Thr Gln
 290 295 300
 Phe Lys Cys Ala Val Tyr Val Leu Gln Lys Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Thr Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Ile Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Phe Glu Val Gln Leu Ile Ser Pro Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Ile Ala
 385 390

<210> 562

<211> 550

<212> PRT

<213> C. Trachomatis D serovar

<400> 562

Met Glu Ser Ser Arg Ile Leu Ile Thr Ser Ala Leu Pro Tyr Ala Asn
 1 5 10 15
 Gly Pro Leu His Phe Gly His Ile Thr Gly Ala Tyr Leu Pro Ala Asp
 20 25 30
 Val Tyr Ala Arg Phe Gln Arg Leu Gln Gly Lys Glu Val Leu Tyr Ile
 35 40 45
 Cys Gly Ser Asp Glu Tyr Gly Ile Ala Ile Thr Leu Asn Ala Glu Leu
 50 55 60
 Ala Gly Met Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His
 65 70 75 80
 Lys Asp Thr Phe Lys Lys Leu Gly Ile Ser Val Asp Phe Phe Ser Arg
 85 90 95
 Thr Thr Asn Thr Tyr His Pro Ala Ile Val Gln Asp Phe Tyr Arg Asn
 100 105 110
 Leu Gln Glu Arg Gly Leu Val Glu Asn Gln Val Thr Glu Gln Leu Tyr
 115 120 125
 Ser Glu Glu Glu Gly Lys Phe Leu Ala Asp Arg Tyr Val Val Gly Thr
 130 135 140
 Cys Pro Lys Cys Gly Phe Asp Arg Ala Arg Gly Asp Glu Cys Gln Gln
 145 150 155 160
 Cys Gly Ala Asp Tyr Glu Ala Arg Asp Leu Lys Glu Pro Arg Ser Lys
 165 170 175
 Leu Thr Gly Ala Ala Leu Ser Leu Arg Asp Thr Glu His Ala Tyr Leu
 180 185 190
 His Leu Glu Arg Met Lys Glu Asp Leu Leu Ala Phe Val Gln Gly Ile
 195 200 205
 Tyr Leu Arg Pro His Met Arg Asn Phe Val Thr Asp Tyr Ile Glu His
 210 215 220
 Leu Arg Pro Arg Ala Val Thr Arg Asp Leu Ser Trp Gly Ile Pro Val
 225 230 235 240


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Pro Asp Leu Glu Asn Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile
                245                250                255
Gly Tyr Ile Ser Gly Thr Met Asp Trp Ala Ala Ser Ile Gly Asp Pro
                260                265                270
Glu Ala Trp Lys Lys Phe Trp Leu Asp Asp Thr Val Thr Tyr Ala Gln
                275                280                285
Phe Ile Gly Lys Asp Asn Thr Ser Phe His Ala Ala Ile Phe Pro Ala
                290                295                300
Met Glu Ile Gly Gln Ser Leu Pro Tyr Lys Lys Val Asp Ala Leu Val
                305                310                315
Thr Ser Glu Phe Leu Leu Leu Glu Gly Phe Gln Phe Ser Lys Ser Asp
                325                330                335
Gly Asn Phe Ile Asp Met Asp Ala Phe Leu Glu Thr Tyr Ser Leu Asp
                340                345                350
Lys Leu Arg Tyr Val Leu Ala Ala Ile Ala Pro Glu Thr Ser Asp Ser
                355                360                365
Glu Phe Ser Phe Gln Glu Phe Lys Thr Arg Cys Asn Ser Glu Leu Val
                370                375                380
Gly Lys Tyr Gly Asn Phe Val Asn Arg Val Leu Ala Phe Ala Val Lys
                385                390                395
Asn Gly Cys Thr Glu Leu Ser Ser Pro Gln Leu Glu Gln Lys Asp Leu
                405                410                415
Asp Phe Ile Ser Lys Ser Gln Lys Leu Ala Lys Asp Ala Ala Glu His
                420                425                430
Tyr Ala Gln Tyr Ser Leu Arg Lys Ala Cys Ser Thr Ile Met Glu Leu
                435                440                445
Ala Ala Leu Gly Asn Gly Tyr Phe Asn Asp Glu Ala Pro Trp Lys Leu
                450                455                460
Ala Lys Glu Gly Asn Trp Asn Arg Val Arg Ala Ile Leu Phe Cys Ala
                465                470                475
Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Met Pro
                485                490                495
Glu Thr Ala Leu Lys Ile Leu Glu Met Ile Ala Pro His Ser Leu Asp
                500                505                510
Leu Gly Ser Gln Asp Pro Asp Arg Leu Gln Ser Leu Trp Thr Asp Ser
                515                520                525
Phe Phe Asp Tyr Ser Glu Glu Lys Phe Ser Leu Lys Glu Pro Glu Leu
                530                535                540
Leu Phe Thr Met Val Glu
545                550

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<210> 563

<211> 100

<212> PRT

<213> C. Trachomatis D serovar

<400> 563

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Met Ala Arg Lys Asp Arg Leu Thr Asn Glu Arg Leu Asn Lys Leu Phe
1                5                10                15
Asp Ser Pro Phe Ser Leu Val Asn Tyr Val Ile Lys Gln Ala Lys Asn
                20                25                30
Lys Ile Ala Arg Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Ala
                35                40                45
Leu Asn Phe Leu Asp Leu Tyr Gly Ile Gln Ser Glu Tyr Ala Glu Arg
                50                55                60
Asp Asp Arg Glu Arg His Leu Ser Ala Thr Gly Glu Arg Arg Arg Glu
                65                70                75
Gln Gly Phe Gly Thr Ser Arg Arg Lys Asp Pro Ser Leu Tyr Asn Trp
                85                90                95
Ser Asp Val Lys
                100

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<210> 564
 <211> 205
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 564
 Met Ser Val Lys Val Ile Ser Pro Phe Ser Gln Asp Gly Val Gln Cys
 1 5 10 15
 Phe Pro Lys Leu Phe Ile Ile Ser Ala Pro Ala Gly Ala Gly Lys Thr
 20 25 30
 Thr Leu Thr His Met Leu Gln Arg Glu Phe Pro Asp Ala Phe Glu Lys
 35 40 45
 Thr Val Ser Ser Thr Thr Arg Ser Ala Arg Pro Gly Glu Val His Gly
 50 55 60
 Val Asp Tyr Leu Phe Val Ser Glu Asp Asp Phe Lys Gln Ser Leu Asp
 65 70 75 80
 Arg Glu Asp Phe Leu Glu Trp Val Phe Leu Phe Gly Thr Tyr Tyr Gly
 85 90 95
 Thr Ser Lys Ala Glu Ile Ser Arg Val Leu Gln Lys Gly Lys His Cys
 100 105 110
 Ile Ala Val Ile Asp Val Gln Gly Ala Leu Ala Leu Lys Lys Gln Met
 115 120 125
 Pro Ala Val Thr Ile Phe Ile Gln Ala Pro Ser Gln Glu Glu Leu Glu
 130 135 140
 Arg Arg Leu Asn Ala Arg Asp Ser Glu Lys Asp Phe Gln Lys Lys Glu
 145 150 155 160
 Arg Leu Glu His Ser Ala Val Glu Ile Ala Ala Ala Ser Glu Phe Asp
 165 170 175
 Tyr Val Val Val Asn Asp Asp Leu Ile Thr Ala Tyr Gln Val Leu Arg
 180 185 190
 Ser Ile Phe Ile Ala Glu Glu His Arg Met Ser His Gly
 195 200 205

<210> 565
 <211> 602
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 565
 Met Lys Pro Tyr Lys Ile Glu Asn Ile Arg Asn Phe Ser Ile Ile Ala
 1 5 10 15
 His Ile Asp His Gly Lys Ser Thr Ile Ala Asp Arg Leu Leu Glu Ser
 20 25 30
 Thr Ser Thr Ile Glu Gln Arg Glu Met Arg Glu Gln Leu Leu Asp Ser
 35 40 45
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val
 50 55 60
 Thr Met Thr Tyr Glu Tyr Glu Gly Glu Thr Tyr Glu Leu Asn Leu Ile
 65 70 75 80
 Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Leu
 85 90 95
 Ala Ala Cys Glu Gly Ala Leu Leu Ile Val Asp Ala Ala Gln Gly Val
 100 105 110
 Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala Leu Glu Arg Asp Leu
 115 120 125
 Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu Pro Ala Ala Gln Pro
 130 135 140
 Glu Ala Ile Lys Lys Gln Ile Glu Glu Phe Ile Gly Leu Asp Thr Ser
 145 150 155 160
 Asn Thr Ile Ala Cys Ser Ala Lys Thr Gly Gln Gly Ile Pro Glu Ile

165 170 175
 Leu Glu Ser Ile Ile Arg Leu Val Pro Pro Lys Pro Pro Gln Glu
 180 185 190
 Thr Glu Leu Lys Ala Leu Ile Phe Asp Ser His Tyr Asp Pro Tyr Val
 195 200 205
 Gly Ile Met Val Tyr Val Arg Val Ile Ser Gly Glu Ile Lys Lys Gly
 210 215 220
 Asp Arg Ile Thr Phe Met Ala Thr Lys Gly Ser Ser Phe Glu Val Leu
 225 230 235 240
 Gly Ile Gly Ala Phe Leu Pro Glu Ala Thr Leu Met Glu Gly Ser Leu
 245 250 255
 Arg Ala Gly Gln Val Gly Tyr Phe Ile Ala Asn Leu Lys Lys Val Lys
 260 265 270
 Asp Val Lys Ile Gly Asp Thr Val Thr Thr Val Lys His Pro Ala Lys
 275 280 285
 Glu Pro Leu Glu Gly Phe Lys Glu Ile Lys Pro Val Val Phe Ala Gly
 290 295 300
 Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu
 305 310 315 320
 Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Asn
 325 330 335
 Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu
 340 345 350
 His Leu Glu Ile Ile Phe Glu Arg Ile Ser Arg Glu Phe Asp Leu Asp
 355 360 365
 Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn
 370 375 380
 Gly Lys Thr Leu Phe Ile Asp Asn Pro Thr Ala Tyr Pro Asp Pro Ala
 385 390 395 400
 Leu Ile Glu His Met Glu Glu Pro Trp Val His Val Asn Ile Ile Thr
 405 410 415
 Pro Gln Glu Tyr Leu Ser Asn Ile Met Ser Leu Cys Met Asp Lys Arg
 420 425 430
 Gly Ile Cys Leu Lys Thr Asp Met Leu Asp Gln His Arg Leu Val Leu
 435 440 445
 Ser Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys
 450 455 460
 Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly
 465 470 475 480
 Asp Tyr Lys Lys Gly Ala Ile Ile Lys Leu Glu Ile Leu Ile Asn Asp
 485 490 495
 Glu Ala Val Asp Ala Phe Ser Cys Leu Val His Arg Asp Lys Ala Glu
 500 505 510
 Ser Lys Gly Arg Ser Ile Cys Glu Lys Leu Val Asp Val Ile Pro Pro
 515 520 525
 Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile Asn Lys Lys Ile Ile
 530 535 540
 Ala Arg Glu Thr Ile Arg Ala Leu Ala Lys Asn Val Thr Ala Lys Cys
 545 550 555 560
 Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Asp Lys Gln Lys
 565 570 575
 Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn
 580 585 590
 Thr Ala Phe Val Glu Val Leu Lys Met Glu
 595 600

<210> 566

<211> 324

<212> PRT

<213> C. Trachomatis D serovar

<400> 566

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Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Thr
 1      5      10      15
Ile Ala Glu Phe Lys Glu Lys Asn Lys Glu Asn Ser Leu Leu Ser Ser
 20      25      30
Ser Glu Ile Gln Lys Leu Asp Lys Arg Leu Asp Arg Leu Lys Glu Lys
 35      40      45
Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His
 50      55      60
Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu
 65      70      75      80
Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val
 85      90      95
Val Gly Gly Phe Ala Lys Ile Gln Gly Gln Arg Phe Met Leu Ile Gly
 100      105      110
Gln Glu Lys Gly Cys Asp Thr Lys Ser Arg Met His Arg Asn Phe Gly
 115      120      125
Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Ala Lys Met
 130      135      140
Ala Glu Lys Phe Gly Leu Pro Ile Ile Phe Leu Val Asp Thr Pro Gly
 145      150      155      160
Ala Phe Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile
 165      170      175
Ala Thr Asn Leu Phe Glu Leu Ala Arg Leu Ala Thr Pro Ile Ile Val
 180      185      190
Ile Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Ile
 195      200      205
Gly Asp Val Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser
 210      215      220
Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser
 225      230      235      240
Asp Ala Ala Ala Met Leu Lys Met His Gly Glu Asp Leu Lys Gly Phe
 245      250      255
Ala Ile Val Asp Ala Val Ile Lys Glu Pro Ile Gly Gly Ala His His
 260      265      270
Asn Pro Ala Ala Thr Tyr Arg Ser Val Gln Glu Tyr Val Leu Gln Glu
 275      280      285
Trp Leu Lys Leu Lys Asp Leu Pro Val Glu Glu Leu Leu Glu Lys Arg
 290      295      300
Tyr Gln Lys Phe Arg Thr Ile Gly Leu Tyr Glu Thr Ser Ser Glu Ser
 305      310      315      320
Asp Ser Glu Ala

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<210> 567

<211> 646

<212> PRT

<213> C. Trachomatis D serovar

<400> 567

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Met Lys Leu Leu Leu Lys Ala Ile Leu Arg His Lys Lys His Leu Val
 1      5      10      15
Leu Phe Gly Phe Ser Leu Leu Ser Ile Leu Gly Leu Thr Ile Thr Ser
 20      25      30
Gln Ala Glu Ile Phe Ser Leu Gly Leu Ile Ala Lys Thr Gly Pro Asp
 35      40      45
Thr Phe Leu Leu Phe Gly Lys Gln Glu Gly Ala Ser Leu Val Lys Arg
 50      55      60
Lys Glu Leu Ser Lys Asp Gln Leu Leu Glu Trp Asp Asn Ile Val
 65      70      75      80
Gly Glu Gly Asp Thr Leu Ser Leu Pro Gln Ala Asn Ala Tyr Ile Ala

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Lys	His	Ser	Gly	85	Ser	Gln	Ser	Ile	90	Lys	Arg	Leu	Ser	95	Ala	Tyr
Leu	Ser	Gly	Cys	100	Phe	Asp	Phe	Ser	105	Leu	Gln	Cys	Leu	110	Ala	Phe
Leu	Val	Val	Val	115	Ala	Ile	Leu	Lys	Ser	Thr	Thr	Leu	Phe	125	Phe	Gln
Phe	Leu	Ala	Gln	130	Leu	Ile	Ala	Ile	Arg	Val	Ser	Cys	Ser	140	Leu	Arg
145	Asp	Tyr	Phe	150	Leu	Gln	Thr	Leu	Pro	Met	Thr	Phe	Phe	155	His	Lys
His	Asp	Met	Gly	165	Asn	Leu	Ser	Ser	170	Val	Ile	Ala	Asp	175	Ser	Met
Ile	Ala	Leu	Ala	180	Ile	Asn	Ala	Leu	185	Met	Val	Asn	Tyr	190	Gln	Ala
Ile	Thr	Met	Thr	195	Leu	Ala	Leu	Val	200	Cys	Leu	Ser	Ile	205	Ser	Trp
210	Phe	Cys	Ala	Cys	Val	Cys	Leu	Ala	215	Phe	Pro	Ile	Phe	220	Ile	Lys
225	Val	Ile	Ile	Ala	Lys	Lys	Val	Lys	230	Leu	Ala	Lys	Arg	235	Leu	Pro
Ser	Gln	Asp	His	245	Ser	Ala	Ala	Ala	250	Leu	Leu	Asp	Phe	255	Gln	Lys
Leu	Thr	Val	Lys	260	Val	Phe	Arg	Thr	265	Gln	Phe	Ser	Phe	270	Leu	Ile
Cys	Gln	Lys	Asn	275	Asp	Glu	Ile	Ala	280	Leu	Glu	Glu	Arg	285	Ser	Tyr
290	Tyr	Ser	Leu	Ile	Pro	Arg	Pro	Leu	295	Leu	His	Thr	Ile	300	Ala	Ala
305	Phe	Ala	Leu	Val	Ile	Met	Ile	Gly	310	Leu	Tyr	His	Phe	315	Ser	Phe
Glu	Glu	Leu	Val	325	Val	Phe	Cys	Gly	330	Leu	Tyr	Leu	Ile	335	Pro	Pro
Ile	Lys	Lys	Phe	340	Ala	Asp	Glu	Asn	345	Ala	Asn	Ile	Met	350	Gly	Ala
Ala	Ala	Glu	Arg	355	Phe	Tyr	Glu	Val	360	Leu	Asp	Leu	Ala	365	Gln	Ser
370	Asn	Val	Ser	Glu	Lys	Leu	Asn	Glu	375	Phe	Gln	Gly	Leu	380	His	Ile
385	Gln	Phe	Cys	Asn	Val	Ser	Phe	Gly	390	Tyr	Val	Glu	Asp	395	Pro	Leu
Ser	Asp	Phe	Asn	405	Leu	Val	Leu	Lys	410	Gly	Glu	Ala	Ile	415	Gly	Val
Gly	Pro	Thr	Gly	420	Ser	Gly	Lys	Ser	425	Thr	Ile	Ala	Lys	430	Leu	Arg
Leu	Tyr	Glu	Val	435	Ser	His	Gly	Glu	440	Leu	Leu	Ile	Asp	445	Ser	Ile
450	Arg	Ser	Tyr	Cys	Lys	Asn	Ser	Leu	455	Arg	Lys	His	Ile	460	Gly	Val
465	Gln	His	Pro	Phe	Leu	Phe	Tyr	Asp	470	Thr	Val	Trp	Asn	475	Cys	Leu
Gly	Arg	Thr	Phe	485	Ser	Glu	Glu	Glu	490	Phe	His	Ala	Leu	495	Thr	Cys
His	Ala	Tyr	Glu	500	Val	Ser	Lys	Met	505	Pro	Gln	Gly	Val	510	Gln	Ala
Leu	Glu	Glu	Ser	515	Ser	Lys	Asn	Leu	520	Ser	Gly	Gly	Gln	525	Arg	Leu
Thr	Ile	Ala	Arg	530	Ala	Leu	Leu	His	535	Thr	Ser	Ile	Leu	540	Leu	Asp
545	Glu	Ala	Thr	Ser	Ala	Leu	Asp	Ala	550	Ile	Ser	Glu	Asn	555	Lys	Glu
				565					570					575		

Ile Val Gly Gln Leu Lys Gly Arg Cys Thr Gln Ile Ile Ile Ala His
 580 585 590
 Lys Leu Ser Thr Leu Glu Tyr Val Asp Arg Ile Val Tyr Leu Glu Gln
 595 600 605
 Gly Lys Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Asp Ser Cys
 610 615 620
 Pro Ala Phe Gln Arg Met Trp Val Leu Ser Gly Ala Lys Asp Trp Glu
 625 630 635 640
 Leu Asn Ala Val Val Lys
 645

<210> 568
 <211> 414
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 568
 Met Phe Ser Ser Ala Ile Val Ile Leu Thr Ala Ile Phe Val Leu Cys
 1 5 10 15
 Ser Gly Phe Val Ser Leu Ser His Ile Ala Leu Phe Ser Leu Pro Ser
 20 25 30
 Ser Leu Ile Ala His Tyr Ser His Ser Lys Asn Arg Gln Leu Arg Gln
 35 40 45
 Ile Ala Asn Leu Met Ala Tyr Pro Asn His Leu Leu Met Thr Leu Val
 50 55 60
 Phe Phe Asp Ile Gly Ile Asn Ile Gly Val Gln Asn Cys Ile Ala Thr
 65 70 75 80
 Leu Val Gly Asp Ser Ala Ser Leu Leu Leu Thr Val Gly Val Pro Leu
 85 90 95
 Ala Leu Thr Leu Val Leu Gly Glu Ile Val Pro Lys Val Ile Ala Ile
 100 105 110
 Pro Tyr Asn Ala Arg Ile Ala Lys Ile Val Thr Pro Ile Ile Phe Ala
 115 120 125
 Ser Thr Lys Ser Phe Arg Pro Ile Phe Asp Trp Ala Ile Ser Gly Ile
 130 135 140
 Asn Phe Ile Val Gln Lys Met Leu Ala Arg Gln Glu Ser Asp Phe Ile
 145 150 155 160
 Gln Pro Gln Glu Leu Lys Glu Val Leu Arg Ser Cys Lys Asp Phe Gly
 165 170 175
 Val Val Asn His Glu Glu Ser Arg Leu Leu Phe Gly Tyr Leu Ser Met
 180 185 190
 Glu Glu Gly Ser Ile Lys Glu Arg Met Thr Pro Lys Gln Glu Ile Ile
 195 200 205
 Phe Tyr Asp Val Leu Thr Pro Ile Glu Asn Leu Tyr Lys Leu Phe Ser
 210 215 220
 Gly Pro Lys Gln Ser Tyr Ser Lys Val Leu Val Cys Lys Gly Gly Leu
 225 230 235 240
 Gln Asn Leu Leu Gly Val Cys Ser Ala Lys Leu Leu Leu Tyr Lys
 245 250 255
 Glu Lys Leu Gln Ser Ala Glu Glu Leu Leu Pro Leu Leu Arg Lys Pro
 260 265 270
 His Tyr Ile Pro Glu Thr Val Ser Ala Lys Thr Ala Leu Tyr His Leu
 275 280 285
 Ala Gly Glu Asp Cys Gly Leu Gly Ile Ile Ile Asp Glu Tyr Gly Ser
 290 295 300
 Ile Glu Gly Leu Ile Thr Gln Asn Asp Leu Phe Lys Ile Val Ser Asp
 305 310 315 320
 Gly Val Ala His Asn Arg Pro Ser Phe Lys Gln Phe Ala His Ser Asp
 325 330 335
 Lys Asn Val Val Ile Ala Ala Gly Thr Tyr Glu Leu Ser Asp Phe Tyr
 340 345 350

Asp Leu Phe Gly Val Asp Leu Pro Thr Thr Ala Asn Cys Val Thr Ile
 355 360 365
 Gly Gly Trp Leu Thr Glu Gln Leu Gly Glu Ile Pro Glu Thr Gly Thr
 370 375 380
 Lys Phe Ala Trp Gly Gln Phe Val Phe Gln Ile Leu Asp Ala Ala Pro
 385 390 395 400
 Asn Cys Val Lys Arg Val Tyr Ile Arg Lys Thr His Gly Asn
 405 410

<210> 569

<211> 404

<212> PRT

<213> C. Trachomatis D serovar

<400> 569

Met Glu Thr Asn Ser Pro Phe Phe Trp Leu Gly Val Asn Leu Leu Cys
 1 5 10 15
 Ile Phe Val Gln Gly Phe Phe Ser Met Glu Met Ala Cys Ile Ser
 20 25 30
 Phe Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Ser Asn Lys Lys
 35 40 45
 Ala Ser Tyr Ile Asn Phe Leu Val Arg Arg Pro Tyr Arg Leu Phe Gly
 50 55 60
 Thr Val Met Leu Gly Val Asn Ile Ala Leu Gln Ile Gly Ser Glu Ser
 65 70 75 80
 Ser Arg Thr Cys Tyr Lys Leu Leu Gly Ile Ser Pro Glu Tyr Ala Pro
 85 90 95
 Ala Thr Gln Ile Ile Leu Val Val Ile Phe Ala Glu Leu Ile Pro Leu
 100 105 110
 Ala Ile Ser Arg Lys Ile Pro Glu Lys Ile Ala Leu Lys Gly Ala Pro
 115 120 125
 Ile Leu Tyr Phe Ala His Tyr Leu Phe Tyr Pro Leu Ile Gln Cys Val
 130 135 140
 Gly Gly Ile Thr Asn Met Ile Tyr Phe Ile Leu Asn Ile Lys Glu Glu
 145 150 155 160
 Thr Leu His Ser Thr Leu Ser Arg Asp Glu Leu Gln Lys Thr Leu Glu
 165 170 175
 Thr His His Glu Glu His Asp Phe Asn Val Ile Ala Thr Asn Ile Phe
 180 185 190
 Ser Leu Ser Ala Thr Ser Val Glu Gln Val Cys Gln Tyr Leu Asp Gln
 195 200 205
 Ile Pro Ile Leu Ser Ala Thr Ala Ser Val Arg Asp Val Cys Gln Leu
 210 215 220
 Val Arg Arg His Arg Leu Asp Phe Val Pro Val Tyr His Lys Val Lys
 225 230 235 240
 Lys Asn Val Val Gly Ile Ala Phe Pro Lys Asn Leu Ile Asn Arg Asn
 245 250 255
 Pro Ser Asp Pro Val Val Pro Tyr Leu Ser Ser Pro Trp Phe Ile Thr
 260 265 270
 Ala Lys Ser Lys Leu Ile His Ala Ile Gln Glu Phe Arg Lys Asn Ser
 275 280 285
 Ser Asn Val Ala Ile Val Leu Asn Asn Asn Gly Glu Pro Met Gly Val
 290 295 300
 Leu Gly Leu His Thr Val Phe Lys Thr Leu Phe Asn Thr Arg Asn Ile
 305 310 315 320
 Ala Gln Leu Lys Pro Lys Pro Thr Ser Leu Ile Glu Arg Thr Phe Ser
 325 330 335
 Gly Asn Thr Pro Leu Ser Glu Ile Glu Asn Glu Leu Asp Ile Ile Phe
 340 345 350
 Met Asp Asn Asp Cys Thr Thr Ile Glu Gln Leu Met Leu Lys Leu Leu
 355 360 365

Asp Thr Pro Pro Glu Val Gly Ala Ser Ile Ile Ile Asn Asp Leu Leu
 370 375 380
 Leu Glu Val Lys Glu Ile Ser Leu Tyr Gly Ile Lys Thr Val Ala Ile
 385 390 395 400
 Lys Asp Thr Leu

<210> 570

<211> 539

<212> PRT

<213> C. Trachomatis D serovar

<400> 570

Met Cys Cys Val Asp Gly Ser Asn Ser Ile Gln Gln Arg Met Arg Phe
 1 5 10 15
 Cys Glu Tyr Arg Thr Ala Ala Gln Glu Ala Lys Thr Ser Leu Ser Ser
 20 25 30
 Asp Cys Ser Leu Leu Glu Ala Arg Leu Ala Leu Arg Ala Leu Ala Lys
 35 40 45
 His His Glu Tyr Ser Ala Trp Arg Glu Ala Phe Leu Arg Ser Gln Glu
 50 55 60
 Arg Phe Pro Ser Leu Glu Ala Asp Arg Asp Ile His Glu Asp Leu Ala
 65 70 75 80
 Ala Ser Leu Leu Gln Lys Asn Ile Arg His Ser Ser Leu Thr Val Arg
 85 90 95
 Val Ile Thr Ile Leu Ala Val Gly Met Ala Arg Asp Tyr Arg Leu Val
 100 105 110
 Pro Ile Val Leu Gln Ala Leu Ser Asp Asp Ser Asp Thr Val Arg Glu
 115 120 125
 Ile Ala Val Gln Val Ala Val Met Tyr Gly Ser Ser Cys Leu Leu Arg
 130 135 140
 Ala Val Gly Asp Leu Ala Lys Asn Asp Ser Ser Ile Gln Val Arg Ile
 145 150 155 160
 Thr Ala Tyr Arg Ala Ala Val Leu Glu Ile Gln Asp Leu Val Pro
 165 170 175
 His Leu Arg Val Val Val Gln Asn Thr Gln Leu Asp Gly Thr Glu Arg
 180 185 190
 Arg Glu Ala Trp Arg Ser Leu Cys Val Leu Thr Arg Pro His Ser Gly
 195 200 205
 Val Leu Thr Gly Ile Asp Gln Ala Leu Met Thr Cys Glu Met Leu Lys
 210 215 220
 Glu Tyr Pro Glu Lys Cys Thr Glu Glu Gln Ile Arg Thr Leu Leu Ala
 225 230 235 240
 Ala Asp His Pro Glu Val Gln Val Ala Thr Leu Gln Ile Ile Leu Arg
 245 250 255
 Gly Gly Arg Val Phe Arg Ser Ser Ile Met Glu Ser Val Gln Lys
 260 265 270
 Leu Ala Cys Asn Ser Leu Ser Ala Arg Val Gln Met Gln Ala Ala Ala
 275 280 285
 Ile Leu Tyr Leu Glu Gly Asp Pro Phe Gly Glu Asp Lys Leu Thr Glu
 290 295 300
 Gly Leu Ser Ala Thr Ser Ser Ile Leu Cys Glu Ala Ala Ser Glu Ala
 305 310 315 320
 Val Cys Ser Leu Gly Ile His Gly Val His Leu Ala Gly Arg Phe Leu
 325 330 335
 Ser Lys Val Gln Gly Met Arg Ser Arg Val Asn Leu Ala Phe Ala Leu
 340 345 350
 Leu Val Ser Arg Glu Lys Val Glu Glu Ala Gly Asp Val Val Ala Ser
 355 360 365
 Phe Ile His Arg Ile Glu Pro Cys Arg Ala Ile Glu Gln Phe Leu Cys
 370 375 380

Glu Asp Gln Lys Ile Phe Val Ala Ser Ser Pro Leu Gln Val Glu Ile
 385 390 395 400
 Met Lys Arg Asp Leu Ala Lys Lys Ile Ile Arg Leu Leu Val Ala Ala
 405 410 415
 Gln Tyr Ser Lys Ala Lys Met Val Val Ala Gln Tyr Leu Ala Gly Gln
 420 425 430
 Gln Val Gly Trp Ser Phe Cys Ser Glu Val Phe Trp Glu Glu Gly Asp
 435 440 445
 Ser Glu Asp Phe Val Glu Pro Leu Gln Glu Glu Ser Phe Ala Phe Ala
 450 455 460
 Leu Glu Lys Ala Leu Ser Phe Leu Gln Arg Glu Gly Gly Glu Ala Gly
 465 470 475 480
 Leu His Ala Val Ile Ser Leu Tyr Pro His Ser Arg Trp Gln Asp Lys
 485 490 495
 Leu Thr Ile Leu Glu Ala Ile Ala Tyr Ser Glu Asn Arg Ile Ala Thr
 500 505 510
 Cys Phe Leu Arg Glu Arg Cys Leu Gln Glu Ala Ala Ser Leu Gln Ser
 515 520 525
 Ala Ala Ala Gly Ala Val Phe Ala Leu Phe Lys
 530 535

<210> 571

<211> 104

<212> PRT

<213> C. Trachomatis D serovar

<400> 571

Met Gln Thr Ser Arg Ile Ser Ser Phe Phe Arg Gly Leu Val His Leu
 1 5 10 15
 Tyr Arg Trp Ala Ile Ser Pro Phe Leu Gly Ala Pro Cys Arg Phe Phe
 20 25 30
 Pro Thr Cys Ser Glu Tyr Ala Leu Val Ala Leu Lys Lys His Pro Leu
 35 40 45
 Arg Lys Ser Leu Phe Leu Ile Ala Lys Arg Leu Leu Lys Cys Gly Pro
 50 55 60
 Trp Cys Ile Gly Gly Ile Asp Leu Val Pro Arg Thr Ser Val Glu Glu
 65 70 75 80
 Tyr Leu Ser Ser Pro Thr Pro Leu Ala Glu Ser Pro Asp Asp Arg Thr
 85 90 95
 Val Pro His Thr Gln Glu Thr Ser
 100

<210> 572

<211> 336

<212> PRT

<213> C. Trachomatis D serovar

<400> 572

Met Gln Leu Phe Phe Gly Arg Phe Tyr Glu Val Ala Cys Ile Val Ala
 1 5 10 15
 Ser Ile Leu Arg Glu Arg Asp Val Gly Val Phe Met Gly Ile Glu Gly
 20 25 30
 Arg Gly Ser Gly Ala Met Gln Ser Lys Lys Thr Ile Lys Trp Leu Lys
 35 40 45
 Gln Ala Leu Val Leu Ser Ser Ile Val Asn Ile Leu Leu Leu Leu
 50 55 60
 Ile Tyr Ser Thr Val Phe Arg Lys Asp Ile Tyr Lys Leu Arg Val Phe
 65 70 75 80
 Pro Gly Asn Leu Ile Ala Lys Ser Ser Arg Ile Gly Lys Ile Pro Glu
 85 90 95
 Asp Ile Leu Glu Arg Leu Glu Asn Ala Ser Phe Ala Asp Leu Leu Ala

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100      105      110
Leu Leu Gln Glu Glu Arg Met Val Phe Gly His Pro Leu Lys Ser Trp
115      120      125
Ala Leu Gly Val Ser Ile Gln Lys Tyr Phe Val Asp Ile Ala Pro Met
130      135      140
Leu Thr His Pro Leu Thr Phe Ile Arg Leu Lys Ser Pro Glu Arg Thr
145      150      155
Trp Leu Leu Pro Asp Ile Asn Asp Gln Glu Phe Thr Arg Ile Cys Gln
160      165      170
Tyr Leu Leu Thr Glu Arg Phe Pro Phe Ser Ser Arg Gly Phe Phe Arg
180      185      190
Ile Met Val Arg Asp Cys Glu Ala Gly Met Val Asp Glu Asp Val Leu
195      200      205
Tyr Arg Phe Cys His Leu Pro Glu Phe Leu Tyr Val Arg Ser Leu Leu
210      215      220
Phe Gly Ala Glu Ile Glu Ala Ala Ser Val Ala Ser Leu Ala Arg Met
225      230      235
Ile Ile Gln Gly Gly Glu Asp Leu Phe Phe Ser Leu Cys Cys Leu Glu
240      245      250
Asn Arg Gln Thr Ala Ile Ser Asp His Gln Arg Arg Cys Phe Leu Lys
255      260      265
Ala Tyr Val Asp Arg Gln Glu Pro Leu Ala Ala Leu Leu Leu Val
270      275      280
His Asp Ala Asp Trp Val Leu His Glu Phe Ser Asp Ser Asp Leu Gln
285      290      295
Ser Phe Ile Gln Leu Leu Pro Arg Glu Ala His Tyr Thr Lys Lys Phe
300      305      310
Leu Gly Cys Val Ala Gln Ser Cys Arg Leu Gly Ile Leu Leu Glu Gly
315      320      325
330      335

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<210> 573

<211> 426

<212> PRT

<213> C. Trachomatis D serovar

<400> 573

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Met Tyr Val Arg Ser Ile Phe Phe Ser Ile Ile Ala Phe Leu Thr Val
1      5      10      15
Gly Cys Ser Phe Ser Pro Pro Glu Ser Gly Leu Ile Ile Ala Ile His
20      25      30
Asp Asp Pro Arg Ser Leu Ser Pro Glu Lys Gly Glu Asn Ala Phe His
35      40      45
Phe Ser Leu Ser Lys Ala Leu Phe Ala Thr Leu Phe Arg Glu Glu Leu
50      55      60
Ser Gly Leu Thr Pro Ala Leu Val Ser Ser Tyr Gln Val Ser Glu Asp
65      70      75
Gly Arg Phe Tyr Arg Phe Cys Ile Arg Lys Asp Ala Lys Trp Ser Asp
80      85      90
Gly Ser Leu Leu Leu Ala Glu Asp Val Ile Ala Ala Trp Glu His Thr
95      100      105
Lys Gln Ala Gly Arg Tyr Ser Leu Leu Phe Glu Lys Leu Ser Phe Arg
110      115      120
Ala Ser Ser Ser Ser Glu Ile Leu Ile Glu Leu Lys Glu Pro Glu Pro
125      130      135
Gln Leu Leu Ala Ile Leu Ala Ser Pro Phe Phe Ala Val Tyr Arg Pro
140      145      150
Glu Asn Pro Phe Leu Ser Ser Gly Pro Phe Met Pro Lys Thr Tyr Val
155      160      165
Gln Gly Gln Thr Leu Val Leu Gln Lys Asn Pro Tyr Tyr Tyr Asp His
170      175      180
Ala His Val Glu Leu His Ser Ile Asp Phe Arg Ile Ile Pro Asn Ile
185      190      195

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      195                200                205
Tyr Thr Ala Leu His Leu Leu Arg Arg Gly Asp Val Asp Trp Val Gly
  210                215                220
Gln Pro Trp His Gln Gly Ile Pro Phe Glu Leu Arg Thr Thr Ser Ala
  225                230                235                240
Leu Tyr Thr His Tyr Ser Val Asp Gly Thr Phe Trp Leu Ile Leu Asn
      245                250                255
Pro Lys Asp Pro Val Leu Ser Ser Leu Ser Asn Arg Gln Arg Leu Ile
  260                265                270
Ala Ala Val Gln Lys Glu Lys Leu Val Lys Gln Ala Leu Gly Thr Gln
  275                280                285
Tyr Arg Val Ala Glu Ser Ser Pro Ser Pro Glu Gly Ile Ile Ala His
  290                295                300
Gln Glu Ala Ser Thr Pro Phe Pro Gly Lys Ile Thr Leu Ile Tyr Pro
  305                310                315                320
Asn Asn Ile Thr Arg Cys Gln Arg Leu Ala Glu Val Leu Gln Glu Gln
      325                330                335
Cys Arg Asp Ala Gly Ile Gln Leu Thr Leu Glu Gly Leu Glu Tyr His
  340                345                350
Val Phe Val Gln Lys Arg Ala Thr Gln Asp Phe Ser Val Ser Thr Ala
  355                360                365
Thr Ser Ile Ala Phe His Pro Leu Ala Lys Ser Lys Phe Asp Gln Thr
  370                375                380
Ala Leu Asp Asn Phe Thr Cys Leu Pro Leu Tyr His Ile Glu Tyr Asp
  385                390                395                400
Tyr Ile Leu Ser Arg Pro Leu Asp Gln Ile Val His Tyr Pro Ser Gly
      405                410                415
Ser Val Asp Leu Thr Tyr Ala His Phe His
      420                425

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<210> 574

<211> 605

<212> PRT

<213> C. Trachomatis D serovar

<400> 574

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Met Gln Asn Ile Leu Arg Thr Ser Ser Cys Arg Tyr Met Phe Leu Leu
  1                5                10                15
Gly Ile Arg Ser Val Trp Asn Arg Val Ala Val Val Asn Asn Phe Arg
      20                25                30
Gly Ser Ser Trp Lys Ile Val Ala Ile Pro Ser Cys Ile Leu Phe Thr
  35                40                45
Leu Ile Phe His Leu Pro Arg Trp Leu Ile Asp Phe Gly Val Cys Thr
  50                55                60
Asn Leu Ala Cys Ser Leu Ser Ile Ile Phe Trp Val Phe Ser Leu Arg
  65                70                75                80
Ser Ser Ala Ser Ala Arg Ile Phe Pro Ser Leu Leu Leu Tyr Leu Cys
      85                90                95
Leu Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Leu Ser
  100                105                110
Ser Gly Trp Ala Ser Pro Leu Ile Phe Ala Leu Gly Asn Phe Phe Ser
  115                120                125
Leu Gly Ser Ile Pro Val Ala Leu Thr Val Cys Leu Leu Leu Phe Leu
  130                135                140
Val Asn Phe Leu Val Ile Thr Lys Gly Ala Glu Arg Ile Ala Glu Val
  145                150                155                160
Arg Ala Arg Phe Ser Leu Glu Ala Leu Pro Gly Lys Gln Met Ser Leu
  165                170                175
Asp Ala Asp Ile Ala Ala Gly Arg Ile Gly Tyr Ser Arg Ala Ser Val
  180                185                190
Lys Lys Ser Ser Leu Leu Glu Glu Ser Asp Tyr Phe Ser Ala Met Glu

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195 200 205
 Gly Val Phe Arg Phe Val Lys Gly Asp Ala Ile Met Ser Trp Val Leu
 210 215 220
 Leu Gly Val Asn Ile Leu Ala Ala Leu Phe Leu Gly Arg Ala Thr His
 225 230 235 240
 Val Gly Asp Leu Trp Leu Thr Val Leu Gly Asp Ala Leu Val Ser Gln
 245 250 255
 Ile Pro Ala Leu Leu Thr Ser Cys Ala Ala Thr Leu Ile Ala Lys
 260 265 270
 Val Gly Glu Lys Glu Ser Leu Ala Gln His Leu Leu Asp Tyr Tyr Glu
 275 280 285
 Gln Ser Arg Gln Ser Phe Leu Phe Ile Ala Leu Ile Leu Cys Gly Met
 290 295 300
 Ala Cys Ile Pro Gly Ala Pro Lys Ala Leu Ile Leu Gly Phe Ser Val
 305 310 315 320
 Leu Leu Phe Leu Gly Tyr Lys Asn Pro Ser Ser Gly Glu Thr Leu Leu
 325 330 335
 Phe Gln Lys Glu Arg Val Glu Phe Val Leu Pro Asp Glu Gly Val Gly
 340 345 350
 Asn Pro Ala Asn Leu Tyr Lys Asp Ala Arg Asn Gln Ile Tyr Gln Glu
 355 360 365
 Leu Gly Val Val Phe Pro Glu Ala Ile Val Val Arg His Val Thr Gly
 370 375 380
 Ser Ser Pro Arg Leu Ile Phe Ser Gly Gln Glu Val Ala Leu Arg Glu
 385 390 395 400
 Leu Ser Cys Pro Ala Ile Leu Glu Ser Ile Arg Gln Leu Ala Pro Glu
 405 410 415
 Thr Ile Ser Glu Arg Phe Val Thr Arg Leu Val Asp Glu Phe Arg Glu
 420 425 430
 His Ala Phe Leu Ser Ile Glu Glu Ile Leu Pro Leu Lys Ile Ser Glu
 435 440 445
 Asn Ser Leu Ile Phe Leu Leu Arg Ala Leu Val Arg Glu Arg Val Ser
 450 455 460
 Leu His Leu Phe Pro Lys Ile Leu Glu Ala Ile Asp Val Tyr Gly Ser
 465 470 475 480
 Gln Pro Lys Asn Ser Gln Glu Leu Val Glu Cys Val Arg Lys Tyr Leu
 485 490 495
 Gly Lys Gln Ile Gly Leu Ser Leu Trp Asn Arg Gln Asp Val Leu Glu
 500 505 510
 Val Ile Thr Ile Asp Ser Leu Val Glu Gln Phe Val Arg Asp Ser Gln
 515 520 525
 Glu Lys Val Val Leu Asp Leu Asn Glu Lys Val Val Ala Gln Val Lys
 530 535 540
 His Leu Leu Arg Val Gly Glu Gly Asn Phe Arg Ala Ile Val Thr Gly
 545 550 555 560
 Ser Glu Thr Arg Lys Glu Leu Lys Arg Ile Val Asp Pro Tyr Phe Pro
 565 570 575
 Asp Leu Leu Val Leu Ala His Ser Glu Leu Pro Glu Glu Ile Pro Ile
 580 585 590
 Thr Leu Leu Gly Ala Val Ser Asp Glu Val Leu Leu Ser
 595 600 605

<210> 575

<211> 173

<212> PRT

<213> C. Trachomatis D serovar

<400> 575

Met Lys Lys Phe Leu Leu Ser Leu Met Ser Leu Ser Ser Leu Pro
 1 5 10 15
 Thr Phe Ala Ala Asn Ser Thr Gly Thr Ile Gly Ile Val Asn Leu Arg

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      20      25      30
Arg Cys Leu Glu Glu Ser Ala Leu Gly Lys Lys Glu Ser Ala Glu Phe
      35      40      45
Glu Lys Lys Met Lys Asn Gln Phe Ser Asn Ser Met Gly Lys Met Glu Glu
      50      55      60
Glu Leu Ser Ser Ile Tyr Ser Lys Leu Gln Asp Asp Tyr Met Glu
      65      70      75
Gly Leu Ser Glu Thr Ala Ala Ala Glu Leu Arg Lys Lys Phe Glu Asp
      85      90      95
Leu Ser Ala Glu Tyr Asn Thr Ala Gln Gly Gln Tyr Tyr Gln Ile Leu
      100      105      110
Asn Gln Ser Asn Leu Lys Arg Met Gln Lys Ile Met Glu Glu Val Lys
      115      120      125
Lys Ala Ser Glu Thr Val Arg Ile Gln Glu Gly Leu Ser Val Leu Leu
      130      135      140
Asn Glu Asp Ile Val Leu Ser Ile Asp Ser Ser Ala Asp Lys Thr Asp
      145      150      155
Ala Val Ile Lys Val Leu Asp Asp Ser Phe Gln Asn Asn
      165      170

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<210> 576

<211> 354

<212> PRT

<213> C. Trachomatis D serovar

<400> 576

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Met Ser Gln Ser Thr Tyr Ser Leu Glu Gln Leu Ala Asp Phe Leu Lys
      1      5      10      15
Val Glu Phe Gln Gly Asn Gly Ala Thr Leu Leu Ser Gly Val Glu Glu
      20      25      30
Ile Glu Glu Ala Lys Thr Ala His Ile Thr Phe Leu Asp Asn Glu Lys
      35      40      45
Tyr Ala Lys His Leu Lys Ser Ser Glu Ala Gly Ala Ile Ile Ile Ser
      50      55      60
Arg Thr Gln Phe Gln Lys Tyr Arg Asp Leu Asn Lys Asn Phe Leu Ile
      65      70      75
Thr Ser Glu Ser Pro Ser Leu Val Phe Gln Lys Cys Leu Glu Leu Phe
      85      90      95
Ile Thr Pro Val Asp Ser Gly Phe Pro Gly Ile His Pro Thr Ala Val
      100      105      110
Ile His Pro Thr Ala Ile Ile Glu Asp His Val Cys Ile Glu Pro Tyr
      115      120      125
Ala Val Val Cys Gln His Ala His Val Gly Ser Ala Cys His Ile Gly
      130      135      140
Ser Gly Ser Val Ile Gly Ala Tyr Ser Thr Val Gly Glu His Ser Tyr
      145      150      155
Ile His Pro Arg Val Val Ile Arg Glu Arg Val Ser Ile Gly Lys Arg
      165      170      175
Val Ile Ile Gln Pro Gly Ala Val Ile Gly Ser Cys Gly Phe Gly Tyr
      180      185      190
Val Thr Ser Ala Phe Gly Gln His Lys His Leu Lys His Leu Gly Lys
      195      200      205
Val Ile Ile Glu Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile Asp
      210      215      220
Arg Gly Arg Phe Lys His Ser Val Val Arg Glu Gly Ser Lys Ile Asp
      225      230      235
Asn Leu Val Gln Ile Ala His Gln Val Glu Val Gly Gln His Ser Met
      245      250      255
Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Asn His
      260      265      270
Val Ile Ile Gly Gly Gln Ala Gly Ile Thr Gly His Ile Cys Ile Ala

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[illegible]

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<210> 577
<211> 421
<212> PRT
<213> C. Trachomatis D serovar
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[illegible]

340 345 350
 Ser Pro Arg Ile Phe Ser Gly Ala Glu Lys Lys Gln Leu Ala Ser
 355 360 365
 Val Ile Thr Asn Thr Leu Asp Ala Ile Asn Ala Asp Asn Glu Asp Tyr
 370 375 380
 Pro Lys Pro Gly Asp Phe Pro Arg Ser Ser Phe Ser Ser Thr Pro Pro
 385 390 395 400
 His Ala Pro Val Pro Gln Ser Glu Ile Pro Thr Ser Pro Thr Ser Thr
 405 410 415
 Gln Pro Pro Ser Pro
 420

<210> 578

<211> 231

<212> PRT

<213> C. Trachomatis D serovar

<400> 578

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 1 5 10 15
 Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30
 Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr
 225 230

<210> 579

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 579

Met Lys Ile Thr Pro Ile Lys Thr Arg Lys Val Phe Ala His Asp Ser
 1 5 10 15
 Leu Gln Glu Ile Leu Gln Glu Ala Leu Pro Leu Gln Glu Arg Ser
 20 25 30
 Val Val Val Val Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
 35 40 45

Ala Asp Ala Arg Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp
 50 55 60
 Ala Tyr Leu Phe Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu
 65 70 75 80
 Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln
 85 90 95
 Pro Phe Val Leu Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile
 100 105 110
 Gly Glu Trp Leu Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile
 115 120 125
 Ile Thr Asp Ser His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile
 130 135 140
 Gly Leu Cys Trp Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser
 145 150 155 160
 Leu Asp Cys Phe Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val
 165 170 175
 Asp Ala Leu Ala Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu
 180 185 190
 Gln Thr Pro Leu Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His
 195 200 205
 Ser His Pro Thr Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu
 210 215 220
 Thr Glu Asp Leu Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln
 225 230 235 240
 Glu Lys Lys

<210> 580

<211> 383

<212> PRT

<213> C. Trachomatis D serovar

<400> 580

Met Leu Pro His Gln Asn Ser Ser Ser Glu Arg Ala Arg His His
 1 5 10 15
 Glu Ser Arg Ser His Arg His Ser Ser Ser Arg His His Val Thr
 20 25 30
 Arg Ser Gln Ser Ser Ala Leu Pro Gln Leu Glu Arg Pro Val Pro
 35 40 45
 His Pro Leu Ala Glu Arg Glu Leu Ile Ile Phe His Ser Val His Gln
 50 55 60
 Gln Gln Asn Asn Asn Pro Leu Arg Met Ile Cys Asp Thr Ile Arg Gln
 65 70 75 80
 Ala Gln Arg Gly Ile Phe Met Arg Ile Tyr Thr Ile Ser Ser Asp Asp
 85 90 95
 Ile Ile Gln Ser Leu Ile Gln Thr Ser His His Val Pro Val Glu Val
 100 105 110
 Lys Tyr His Cys Gly Glu Ser Leu Pro Val Ala Cys Gln Asn Ser Arg
 115 120 125
 Val Val Leu Arg Leu Thr Asn Gly Arg Thr Leu Gln His Lys Lys Thr
 130 135 140
 Met Leu Ala Asp Phe Gln Thr Val Val Thr Gly Ser Ala Asn Tyr Thr
 145 150 155 160
 Asp Leu Ser Leu Asn His Asp Ala Asn Val Thr Ala Cys Ile Glu Ser
 165 170 175
 Ser Glu Leu His Asp Ala Val Phe Ser Glu Arg Pro Gln Leu Val His
 180 185 190
 Val Gly Pro Gln Leu Leu Asn Tyr Ile Pro Ile Gln Arg Leu Ile Pro
 195 200 205
 Asn Ala Ala Ser Lys Met Ile Leu Asn Ala Ile Asn Gln Ala Thr Asp
 210 215 220


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Ser Ile Phe Val Leu Met Tyr Ile Phe Leu Ser Pro Glu Phe Phe Leu
225                230                235                240
Ala Leu Ala Gln Ala Met Arg Arg Gly Val Arg Val Lys Val Ile Ile
245                250                255
Asp Asn His Ser Lys Gln Asp Thr Cys Lys Leu Leu Ser Lys Leu Gly
260                265                270
Ile Gln Leu Pro Ile Tyr Glu Arg Lys Thr Glu Gly Val Leu His Thr
275                280                285
Lys Ile Cys Cys Ile Asp Asn Lys Thr Leu Ile Phe Gly Ser Ala Asn
290                295                300
Trp Ser Gly Ala Gly Met Ile Lys Asn Phe Glu Asp Leu Phe Ile Leu
305                310                315                320
Arg Pro Ile Thr Glu Thr Gln Leu Gln Ala Phe Met Asp Val Trp Ser
325                330                335
Leu Leu Glu Thr Asn Ser Ser Tyr Leu Ser Pro Glu Ser Val Leu Thr
340                345                350
Ala Pro Thr Pro Ser Ser Arg Pro Thr Gln Gln Asp Thr Asp Ser Asp
355                360                365
Asp Glu Gln Pro Ser Thr Ser Gln Gln Asp Ile Arg Met Arg Lys
370                375                380

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<210> 581
<211> 193
<212> PRT
<213> C. Trachomatis D serovar

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<400> 581
Met Trp Phe Phe Leu Gly Ser Pro Ser Ala Ile Thr Asn Phe Ser Arg
1          5          10          15
Val Asp Val Ala Leu Asn Leu Arg Ile Asn Arg Gln Ile Arg Ala Pro
20          25          30
Arg Val Arg Val Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ser
35          40          45
Ile Lys Glu Ala Leu Asp Leu Ala Lys Glu Ala Asn Leu Asp Leu Val
50          55          60
Glu Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr
65          70          75          80
Gly Lys Tyr Arg Tyr Asp Val Thr Lys Lys Glu Lys Asp Ser Lys Lys
85          90          95
Ala Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile
100         105         110
Asp Asp Asn Asp Phe Leu Thr Lys Ala Lys Gln Ala Arg Ala Phe Ile
115         120         125
Glu Lys Gly Asn Lys Val Lys Val Ser Cys Met Phe Arg Gly Arg Glu
130         135         140
Leu Ala Tyr Pro Glu His Gly Tyr Lys Val Ile Gln Arg Met Cys Gln
145         150         155         160
Gly Leu Glu Asp Ile Gly Phe Val Glu Ser Glu Pro Lys Leu Asn Gly
165         170         175
Arg Ser Leu Ile Cys Val Ile Ala Pro Gly Thr Leu Lys Thr Lys Lys
180         185         190
Lys

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<210> 582
<211> 264
<212> PRT
<213> C. Trachomatis D serovar

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<400> 582
Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn Thr Glu Asn Cys Val Phe

```

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1           5           10           15
Ala Asp Asn Ile Lys Val Gly Gln Met Thr Glu Pro Leu Lys Asp Gln
20
Gln Ile Ile Leu Gly Thr Lys Ser Thr Pro Val Ala Ala Lys Met Thr
35
Ala Ser Asp Gly Ile Ser Leu Thr Val Ser Asn Asn Ser Ser Thr Asn
50
Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu Lys Ala Tyr Gln Leu Ile
65
Leu Glu Lys Leu Gly Asn Gln Ile Leu Asp Gly Ile Ala Asp Thr Ile
85
Val Asp Ser Thr Val Gln Asp Ile Leu Asp Lys Ile Thr Thr Asp Pro
100
Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn Phe Pro Ile Thr Asn Lys
115
Ile Gln Cys Asn Gly Leu Phe Thr Pro Ser Asn Ile Glu Thr Leu Leu
130
Gly Gly Thr Glu Ile Gly Lys Phe Thr Val Thr Pro Lys Ser Ser Gly
145
Ser Met Phe Leu Val Ser Ala Asp Ile Ile Ala Ser Arg Met Glu Gly
165
Gly Val Val Leu Ala Leu Val Arg Glu Gly Asp Ser Lys Pro Cys Ala
180
Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro Asn Leu Cys Ser Leu Arg
195
Thr Ser Ile Thr Asn Thr Gly Leu Thr Pro Thr Thr Tyr Ser Leu Arg
210
Val Gly Gly Leu Glu Ser Gly Val Val Trp Val Asn Ala Leu Ser Asn
225
Gly Asn Asp Ile Leu Gly Ile Thr Asn Thr Ser Asn Val Ser Phe Leu
245
Glu Val Ile Pro Gln Thr Asn Ala
260

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<210> 583

<211> 1053

<212> PRT

<213> C. Trachomatis D serovar

<400> 583

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Met Phe Thr Arg Ile Val Met Val Asp Leu Gln Glu Lys Gln Cys Thr
1           5           10           15
Ile Val Lys Arg Asn Gly Met Phe Val Pro Phe Asp Arg Asn Arg Ile
20
Phe Gln Ala Leu Glu Ala Ala Phe Arg Asp Thr Arg Arg Ile Asp Asp
35
His Met Pro Leu Pro Glu Asp Leu Glu Ser Ser Ile Arg Ser Ile Thr
50
His Gln Val Val Lys Glu Val Val Gln Lys Ile Thr Asp Gly Gln Val
65
Val Thr Val Glu Arg Ile Gln Asp Met Val Glu Ser Gln Leu Tyr Val
85
Asn Gly Leu Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Asp
100
Arg Lys Ala His Arg Lys Lys Ser Trp Gln Ser Leu Ser Val Val Arg
115
Arg Cys Gly Thr Val Val His Phe Asn Pro Met Lys Ile Ser Ala Ala
130
Leu Glu Lys Ala Phe Arg Ala Thr Asp Lys Thr Glu Gly Met Thr Pro
145
Ser Ser Val Arg Glu Glu Ile Asn Ala Leu Thr Gln Asn Ile Val Ala
150

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Glu	Ile	Glu	Glu	65	Cys	Cys	Pro	Gln	Gln	170	Asp	Arg	Arg	Ile	Asp	175	Ile	Glu
Lys	Ile	Gln	180	Asp	Ile	Val	Glu	Gln	185	Gln	Leu	Met	Val	Val	190	Gly	His	Tyr
Ala	Val	Ala	195	Lys	Asn	Tyr	Ile	Leu	200	Tyr	Arg	Glu	Ala	Arg	205	Ala	Arg	Val
Arg	Asp	Asn	210	Arg	Glu	Glu	215	Asp	Gly	Ser	Thr	Glu	220	Lys	Thr	Ile	Ala	Glu
Glu	Ala	Val	225	Glu	Val	Leu	Ser	Lys	Asp	Gly	Ser	Thr	235	Thr	Tyr	Thr	Met	Thr
His	Ser	Gln	240	Leu	Leu	Ala	His	Leu	Ala	Arg	Ala	Cys	Ser	Arg	245	Phe	Pro	Thr
Glu	Thr	Thr	250	Asp	Ala	Ala	Leu	Leu	255	Thr	Asp	Met	Ala	Phe	260	Ala	Asn	Phe
Tyr	Ser	Gly	265	Ile	Lys	Glu	Ser	Gln	270	Val	Val	Leu	Ala	Cys	Ile	Met	Ala	Thr
Ala	Arg	Ala	275	Asn	Ile	Glu	Lys	Glu	280	Pro	Asp	Tyr	Ala	Phe	285	Val	Ala	Ala
Glu	Leu	Leu	290	Leu	Asp	Val	Val	Tyr	Lys	Glu	300	Ala	Leu	Gly	Lys	Ser	Lys	Lys
Tyr	Ala	Glu	305	Asp	Glu	Gln	Ala	His	310	Arg	Asp	His	His	Phe	Lys	Arg	Tyr	Thr
Ile	Ala	Glu	315	Gly	Asp	Thr	Tyr	Arg	320	Leu	Asn	Ala	Glu	Leu	325	His	Leu	Leu
Phe	Asp	Leu	330	Asp	Ala	Leu	Ala	Asp	335	Ala	Met	Asp	Leu	Ser	340	Arg	Asp	Leu
Gln	Phe	Ser	345	Tyr	Met	Gly	Ile	Gln	350	Asn	Leu	Tyr	Asp	Arg	355	Tyr	Phe	Asn
His	His	Glu	360	Gly	Cys	Arg	Leu	Glu	365	Thr	Pro	Gln	Ile	Phe	370	Trp	Met	Arg
Val	Ala	Met	375	Gly	Leu	Ala	Leu	Asn	380	Glu	Gln	Asp	Lys	Thr	385	Ser	Trp	Ala
Ile	Thr	Phe	390	Tyr	Asn	Leu	Leu	Ser	395	Thr	Phe	Arg	Tyr	Thr	400	Pro	Ala	Thr
Pro	Thr	Leu	405	Phe	Asn	Ser	Gly	Met	410	His	Ser	Gln	Leu	Ser	415	Ser	Ser	Cys
Tyr	Leu	Ser	420	Thr	Val	Gln	Asp	Asn	425	Val	Asn	Ile	Tyr	Lys	430	Val	Ile	Asn
Ala	Asp	Asn	435	Ala	Met	Leu	Ser	Lys	440	Ala	Gly	Gly	Ile	Gly	445	Asn	Asp	Thr
Trp	Thr	Ala	450	Ile	Arg	Ala	Thr	Gly	455	Leu	Ile	Lys	Gly	Thr	460	Asn	Gly	Thr
Arg	Ser	Gln	465	Gly	Val	Ile	Pro	Phe	470	Ile	Lys	Val	Thr	Asn	475	Thr	Ala	Ala
Val	Ala	Val	480	Asn	Gln	Gly	Gly	Lys	485	Arg	Lys	Gly	Ala	Val	490	Cys	Val	Tyr
Leu	Glu	Val	495	Trp	His	Leu	Asp	Tyr	500	Glu	Asp	Phe	Leu	Glu	505	Leu	Lys	Lys
Asn	Thr	Gly	510	Asp	Glu	Arg	Arg	Arg	515	His	Asp	Val	Asn	Ile	520	Ala	Ser	Thr
Trp	Ile	Pro	525	Asp	Leu	Phe	Phe	Lys	530	Leu	Gln	Gln	Lys	Gly	535	Thr	Trp	Trp
Thr	Leu	Phe	540	Ser	Pro	Asp	Asp	Val	545	Pro	Gly	Leu	His	Ala	550	Tyr	Gly	Gly
Glu	Glu	Phe	555	Glu	Arg	Leu	Tyr	Glu	560	Glu	Tyr	Glu	Arg	Lys	565	Val	Asp	Thr
Gly	Glu	Ile	570	Arg	Leu	Phe	Lys	Lys	575	Val	Glu	Ala	Glu	Asp	580	Leu	Trp	Thr
Lys	Met	Leu	585	Ser	Met	Leu	Phe	Glu	590	Thr	Gly	His	Pro	Trp	595	Met	Thr	Phe

Lys Asp Pro Ser Asn Ile Arg Ser Ala Gln Asp His Lys Gly Val Val
 660 665 670
 Arg Cys Ser Asn Leu Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Thr
 675 680 685
 Glu Thr Ala Val Cys Asn Leu Gly Ser Ile Asn Leu Val Gln His Ile
 690 695 700
 Val Gly Asp Gly Leu Asp Glu Glu Lys Leu Ser Glu Thr Ile Ser Ile
 705 710 715 720
 Ala Val Arg Met Leu Asp Asn Val Ile Asp Ile Asn Phe Tyr Pro Thr
 725 730 735
 Lys Glu Ala Lys Glu Ala Asn Phe Ala His Arg Ala Ile Gly Leu Gly
 740 745 750
 Val Met Gly Phe Gln Asp Ala Leu Tyr Lys Leu Asp Ile Ser Tyr Ala
 755 760 765
 Ser Gln Glu Ala Val Glu Phe Ala Asp Tyr Ser Ser Glu Leu Ile Ser
 770 775 780
 Tyr Tyr Ala Ile Gln Ala Ser Cys Leu Leu Ala Lys Glu Arg Gly Thr
 785 790 795 800
 Tyr Ser Ser Tyr Lys Gly Ser Lys Trp Asp Arg Gly Leu Leu Pro Ile
 805 810 815
 Asp Thr Ile Gln Leu Leu Ala Asn Tyr Arg Gly Glu Ala Asn Leu Gln
 820 825 830
 Met Asp Thr Ser Ser Arg Lys Asp Trp Glu Pro Ile Arg Ser Leu Val
 835 840 845
 Lys Glu His Gly Met Arg His Cys Gln Leu Met Ala Ile Ala Pro Thr
 850 855 860
 Ala Thr Ile Ser Asn Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Thr
 865 870 875 880
 Tyr Lys His Leu Phe Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile
 885 890 895
 Pro Asn Val Tyr Leu Ile Glu Lys Leu Lys Lys Leu Gly Ile Trp Asp
 900 905 910
 Ala Asp Met Leu Asp Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu
 915 920 925
 Ile Glu Arg Ile Pro Asp His Leu Lys His Ile Phe Leu Thr Ala Phe
 930 935 940
 Glu Ile Glu Pro Glu Trp Ile Ile Glu Cys Ala Ser Arg Arg Gln Lys
 945 950 955 960
 Trp Ile Asp Met Gly Gln Ser Leu Asn Leu Tyr Leu Ala Gln Pro Asp
 965 970 975
 Gly Lys Lys Leu Ser Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu
 980 985 990
 Lys Thr Thr Tyr Tyr Leu Arg Ser Ser Ser Ala Thr Thr Val Glu Lys
 995 1000 1005
 Ser Phe Val Asp Ile Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys
 1010 1015 1020
 Asn Lys Ser Ala Ser Ala Gly Ile Ile Val Glu Arg Ala Lys Lys Ala
 1025 1030 1035 1040
 Pro Val Cys Ser Leu Glu Glu Gly Cys Glu Ala Cys Gln
 1045 1050

<210> 584

<211> 346

<212> PRT

<213> C. Trachomatis D serovar

<400> 584

Met Gln Ala Asp Ile Leu Asp Gly Lys Gln Lys Arg Val Asn Leu Asn
 1 5 10 15
 Ser Lys Arg Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30

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Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
    35          40          45
Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu
    50          55          60
Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
    65          70          75
Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
    85          90          95
Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
    100          105          110
Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
    115          120          125
Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
    130          135          140
Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
    145          150          155
Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
    165          170          175
Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
    180          185          190
Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
    195          200          205
Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
    210          215          220
Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
    225          230          235
Ile Lys Glu Glu Asn Pro Glu Ile Trp Thr Pro Glu Leu Gln Gln Glu
    245          250          255
Ile Val Glu Leu Ile Lys Arg Ala Val Asp Leu Glu Ile Glu Tyr Ala
    260          265          270
Gln Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ala Ser Met Phe
    275          280          285
Ile Asp Tyr Val Gln His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
    290          295          300
Leu Lys Pro Ile Tyr His Thr Lys Asn Pro Phe Pro Trp Met Ser Glu
    305          310          315
Thr Ile Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Ile
    325          330          335
Glu Tyr Gln His Ala Ala Ser Leu Thr Trp
    340          345

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<210> 585

<211> 326

<212> PRT

<213> C. Trachomatis D serovar

<400> 585

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Met Ser Phe Phe His Thr Arg Lys Tyr Lys Leu Ile Leu Arg Gly Leu
    1          5          10          15
Leu Cys Leu Ala Gly Cys Phe Leu Met Asn Ser Cys Ser Ser Ser Arg
    20          25          30
Gly Asn Gln Pro Ala Asp Glu Ser Ile Tyr Val Leu Ser Met Asn Arg
    35          40          45
Met Ile Cys Asp Cys Val Ser Arg Ile Thr Gly Asp Arg Val Lys Asn
    50          55          60
Ile Val Leu Ile Asp Gly Ala Ile Asp Pro His Ser Tyr Glu Met Val
    65          70          75
Lys Gly Asp Glu Asp Arg Met Ala Met Ser Gln Leu Ile Phe Cys Asn
    85          90          95
Gly Leu Gly Leu Glu His Ser Ala Ser Leu Arg Lys His Leu Glu Gly
    100          105          110

```

Asn Pro Lys Val Val Asp Leu Gly Gln Arg Leu Leu Asn Lys Asn Cys
 115 120 125
 Phe Asp Leu Leu Ser Glu Glu Gly Phe Pro Asp Pro His Ile Trp Thr
 130 135 140
 Asp Met Arg Val Trp Gly Ala Ala Val Lys Glu Met Ala Ala Ala Leu
 145 150 155 160
 Ile Gln Gln Phe Pro Gln Tyr Glu Glu Asp Phe Gln Lys Asn Ala Asp
 165 170 175
 Gln Ile Leu Ser Glu Met Glu Glu Leu Asp Arg Trp Ala Ala Arg Ser
 180 185 190
 Leu Ser Thr Ile Pro Glu Lys Asn Arg Tyr Leu Val Thr Gly His Asn
 195 200 205
 Ala Phe Ser Tyr Phe Thr Arg Arg Tyr Leu Ser Ser Asp Ala Glu Arg
 210 215 220
 Val Ser Gly Glu Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser
 225 230 235 240
 Pro Glu Ala Gln Ile Ser Ile Arg Asp Ile Met Arg Val Val Glu Tyr
 245 250 255
 Ile Ser Ala Asn Asp Val Glu Val Val Phe Leu Glu Asp Thr Leu Asn
 260 265 270
 Gln Asp Ala Leu Arg Lys Ile Val Ser Cys Ser Lys Ser Gly Gln Lys
 275 280 285
 Ile Arg Leu Ala Lys Ser Pro Leu Tyr Ser Asp Asn Val Cys Asp Asn
 290 295 300
 Tyr Phe Ser Thr Phe Gln His Asn Val Arg Thr Ile Thr Glu Glu Leu
 305 310 315 320
 Gly Gly Thr Val Leu Glu
 325

<210> 586

<211> 102

<212> PRT

<213> C. Trachomatis D serovar

<400> 586

Met Gln Asn Lys Arg Lys Val Arg Asp Asp Phe Ile Lys Ile Val Lys
 1 5 10 15
 Asp Val Lys Lys Asp Phe Pro Glu Leu Asp Leu Lys Ile Arg Val Asn
 20 25 30
 Lys Glu Lys Val Thr Phe Leu Asn Ser Pro Leu Glu Leu Tyr His Lys
 35 40 45
 Ser Val Ser Leu Ile Leu Gly Leu Leu Gln Gln Ile Glu Asn Ser Leu
 50 55 60
 Gly Leu Phe Pro Asp Ser Pro Val Leu Glu Lys Leu Glu Asp Asn Ser
 65 70 75 80
 Leu Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp
 85 90 95
 Met Phe Ser Lys Ala Glu
 100

<210> 587

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 587

Val Gly Cys Asn Leu Ala Gln Phe Leu Gly Lys Lys Val Leu Leu Ala
 1 5 10 15
 Asp Leu Asp Pro Gln Ser Asn Leu Ser Ser Gly Leu Gly Ala Ser Val
 20 25 30
 Arg Asn Asn Gln Lys Gly Leu His Asp Ile Val Tyr Lys Ser Asn Asp

```

      35              40              45
Leu Lys Ser Ile Ile Cys Glu Thr Lys Lys Asp Ser Val Asp Leu Ile
  50              55              60
Pro Ala Ser Phe Leu Ser Glu Gln Phe Arg Glu Leu Asp Ile His Arg
  65              70              75              80
Gly Pro Ser Asn Asn Leu Lys Leu Phe Leu Asn Glu Tyr Cys Ala Pro
      85              90              95
Phe Tyr Asp Ile Cys Ile Ile Asp Thr Pro Pro Ser Leu Gly Gly Leu
      100              105              110
Thr Lys Glu Ala Phe Val Ala Gly Asp Lys Leu Ile Ala Cys Leu Thr
      115              120              125
Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile Arg Glu Phe Leu
      130              135              140
Ser Ser Val Gly Lys Pro Glu Glu His Ile Leu Gly Ile Ala Leu
      145              150              155              160
Ser Phe Trp Asp Asp Arg Asn Ser Thr Asn Gln Met Tyr Ile Asp Ile
      165              170              175
Ile Glu Ser Ile Tyr Lys Asn Lys Leu Phe Ser Thr Lys Ile Arg Arg
      180              185              190
Asp Ile Ser Leu Ser Arg Ser Leu Leu Lys Glu Asp Ser Val Ala Asn
      195              200              205
Val Tyr Pro Asn Ser Arg Ala Ala Glu Asp Ile Leu Lys Leu Thr His
      210              215              220
Glu Ile Ala Asn Ile Leu His Ile Glu Tyr Glu Arg Asp Tyr Ser Gln
      225              230              235              240
Arg Thr Thr

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<210> 588

<211> 527

<212> PRT

<213> C. Trachomatis D serovar

<400> 588

```

Met Pro Ser Leu Ser Gln Ser Arg Arg Ile Ile Gln Gln Ser Ser Ile
  1              5              10              15
Arg Lys Ile Trp Asn Gln Ile Asp Thr Ser Pro Lys His Gly Val Cys
      20              25              30
Val Pro Leu Phe Ser Leu Tyr Thr Gln Glu Ser Cys Gly Ile Gly Glu
      35              40              45
Phe Leu Asp Leu Ile Pro Met Ile Asp Trp Cys Ile Ser Cys Gly Phe
      50              55              60
Gln Ile Leu Gln Ile Leu Pro Ile Asn Asp Thr Gly Ser Cys Ser Ser
      65              70              75              80
Pro Tyr Asn Ser Ile Ser Ser Ile Ala Leu Asn Pro Leu His Leu Ser
      85              90              95
Ile Ser Ala Leu Pro Tyr Lys Glu Glu Val Pro Ala Ala Glu Thr Arg
      100              105              110
Ile Arg Glu Met Gln Gln Leu Ser Gln Leu Pro Gln Val His Tyr Glu
      115              120              125
Lys Val Arg Ser Met Lys Arg Asp Phe Phe Gln Glu Tyr Tyr Arg Val
      130              135              140
Cys Lys Gln Lys Lys Leu Thr Asp His Pro Asp Phe Tyr Ala Phe Cys
      145              150              155              160
Glu Gln Glu Lys Tyr Trp Leu His Pro Tyr Ala Leu Phe Arg Ser Ile
      165              170              175
Arg Glu His Leu Asp Asn Leu Pro Ile Asn His Trp Pro Thr Tyr
      180              185              190
Thr Asp Leu Ser Gln Ile Thr Glu His Glu Arg Thr Phe Ala Glu Asp
      195              200              205
Ile Gln Phe His Ser Tyr Leu Gln Tyr Leu Cys Phe Gln Gln Met Thr

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210 215 220
 Gln Val Arg Glu His Ala Asn Cys Lys Ser Cys Leu Ile Lys Gly Asp
 225 230 235 240
 Ile Pro Ile Leu Ile Ser Lys Asp Ser Cys Asp Val Trp Phe Tyr Arg
 245 250 255
 His Tyr Phe Ser Ser Ser Glu Ser Val Gly Ala Pro Pro Asp Leu Tyr
 260 265 270
 Asn Ala Glu Gly Gln Asn Trp His Leu Pro Ile Cys Asn Met Lys Thr
 275 280 285
 Leu Gln Gln Asp Asn Tyr Leu Trp Trp Lys Glu Arg Leu Arg Tyr Ala
 290 295 300
 Glu Asn Phe Tyr Ser Leu Tyr Arg Leu Asp His Val Val Gly Leu Phe
 305 310 315 320
 Arg Phe Trp Val Trp Asp Glu Ser Gly Cys Gly Arg Phe Glu Pro His
 325 330 335
 Asp Pro Lys Asn Tyr Leu Ala Gln Gly Gln Asp Ile Leu Ser His Leu
 340 345 350
 Leu Thr Ser Ser Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Thr Ile
 355 360 365
 Pro Ser Asp Val Lys Arg Met Leu Glu Ser Phe Ala Val Cys Gly Thr
 370 375 380
 Arg Ile Pro Arg Trp Glu Arg Asn Trp Glu Gly Asn Gly Ala Tyr Thr
 385 390 395 400
 Pro Phe Asp Gln Tyr Asp Pro Leu Ser Val Thr Ser Leu Ser Thr His
 405 410 415
 Asp Ser Ser Thr Leu Ala Ser Trp Trp Lys Glu Ser Pro Gln Glu Ser
 420 425 430
 Lys Leu Phe Ala Gln Phe Leu Gly Leu Pro Tyr Ser Ser Thr Leu Ser
 435 440 445
 Leu His Asn His Thr Glu Ile Leu Lys Leu Ser His Lys Thr Ser Ser
 450 455 460
 Ile Phe Arg Ile Asn Leu Ile Asn Asp Tyr Leu Ala Leu Phe Pro Asp
 465 470 475 480
 Leu Ile Ser Lys Thr Pro Arg Tyr Glu Arg Ile Asn Leu Pro Gly Thr
 485 490 495
 Ile Ser Lys Asn Asn Trp Val Tyr Arg Val Lys Pro Ser Ile Glu Asp
 500 505 510
 Leu Ser Ser His Ser Lys Leu Asn Ser Leu Leu Glu Ala Leu Phe
 515 520 525

<210> 589

<211> 146

<212> PRT

<213> C. Trachomatis D serovar

<400> 589

Met Gln Asn Gln Phe Glu Gln Leu Leu Thr Glu Leu Gly Thr Gln Ile
 1 5 10 15
 Asn Ser Pro Leu Thr Pro Asp Ser Asn Asn Ala Cys Ile Val Arg Phe
 20 25 30
 Gly Tyr Asn Asn Val Ala Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
 35 40 45
 Phe Leu Val Ala Gly Val Met Leu Gly Lys Leu Pro Glu Asn Thr Phe
 50 55 60
 Arg Gln Lys Ile Phe Lys Ala Ala Leu Ser Ile Asn Gly Ser Pro Gln
 65 70 75 80
 Ser Asn Ile Lys Gly Thr Leu Gly Tyr Gly Glu Ile Ser Asn Gln Leu
 85 90 95
 Tyr Leu Cys Asp Arg Leu Asn Met Thr Tyr Leu Asn Gly Glu Lys Leu
 100 105 110
 Ala Arg Tyr Leu Val Leu Phe Ser Gln His Ala Asn Ile Trp Met Gln

115 120 125
 Ser Ile Ser Lys Gly Ala Leu Pro Asp Leu His Ala Leu Gly Met Tyr
 130 135 140
 His Leu
 145

```
<210> 590
<211> 650
<212> PRT
<213> C. Trachomatis D serovar
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[illegible]

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385          390          395          400
Gln Asn Ala Leu Arg Leu Gly Glu Glu Ala Gln Gln Cys Leu Leu Pro
          405          410          415
Asn Gln Leu Pro Asp Ser Pro Thr Thr Glu Ile Ala Lys Ala Tyr Ile
          420          425          430
Pro Ala Ile Thr Val Gly Gly Asp Phe Phe Asp Ile Phe Val Ile Gly
          435          440          445
Glu Gly Pro Gln Ala Lys Leu Phe Leu Ile Val Ala Asp Ala Ser Gly
          450          455          460
Lys Gly Val Asn Ala Cys Ala Tyr Ser Leu Phe Leu Lys Asn Met Leu
          465          470          475          480
His Thr Phe Leu Ser Glu Leu Ser Ser Ile Gln Glu Ala Val Gln Gln
          485          490          495
Thr Ala Ala Leu Phe Tyr Gln Gln Thr Ala Glu Ser Gly Met Phe Val
          500          505          510
Thr Leu Cys Ile Tyr Cys Tyr His Tyr Ala Thr Arg Glu Leu Glu Tyr
          515          520          525
Tyr Ser Cys Gly His Asn Pro Ala Cys Leu Arg Ala Pro Asn Gly Asp
          530          535          540
Ile Ser Phe Leu Ser His Pro Gly Met Ala Leu Gly Phe Leu Pro Glu
          545          550          555          560
Val Pro Pro His Pro Ala Tyr Thr Leu Val Leu Glu Glu Glu Ser Leu
          565          570          575
Leu Val Leu Tyr Thr Asp Gly Val Thr Glu Ala Ser Asn Lys His Gly
          580          585          590
Glu Met Phe Gly Glu Glu Arg Leu Lys Ala Leu Val Ala Ser Leu Thr
          595          600          605
Lys Gln Ser Ala Glu Glu Ala Ile Gln Ser Ile Met Phe Ser Ile Lys
          610          615          620
Ser Phe Val Lys Asp Cys Pro Gln His Asp Asp Ile Thr Leu Leu Val
          625          630          635          640
Leu Lys Ile Pro Lys Glu Pro Ser Ala Tyr
          645          650

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<210> 591

<211> 313

<212> PRT

<213> C. Trachomatis D serovar

<400> 591

```

Met Leu Ser Tyr Ile Lys Arg Arg Leu Leu Phe Asn Leu Leu Ser Leu
1          5          10          15
Trp Val Val Val Thr Leu Thr Phe Phe Ile Ile Lys Thr Ile Pro Gly
          20          25          30
Asp Pro Phe Asn Asp Glu Asn Gly Asn Ile Leu Ser Ser Glu Thr Leu
          35          40          45
Ala Leu Leu Lys Asn Arg Tyr Gly Leu Asp Lys Pro Leu Phe Thr Gln
          50          55          60
Tyr Leu Ile Tyr Leu Lys Cys Leu Leu Thr Leu Asp Phe Gly Glu Ser
          65          70          75          80
Leu Ile Tyr Lys Asp Arg Thr Val Ile Ser Ile Ile Ala Ala Ala Leu
          85          90          95
Pro Ser Ser Ala Ile Leu Gly Leu Glu Ser Leu Cys Leu Ser Leu Phe
          100          105          110
Gly Gly Ile Thr Leu Gly Ile Leu Ala Ala Phe Tyr Lys Lys Ser Cys
          115          120          125
Gly Arg Thr Ile Phe Phe Ser Ser Val Ile Gln Ile Ser Val Pro Ala
          130          135          140
Phe Val Ile Gly Ala Phe Leu Gln Tyr Val Phe Ala Ile Lys Tyr Ser
          145          150          155          160
Cys Leu Pro Ile Ala Cys Trp Gly Asn Phe Ser His Thr Leu Leu Pro

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                165                170                175
Ser Ile Ala Leu Ala Ile Thr Pro Met Ala Phe Ile Thr Gln Leu Thr
                180                185                190
Cys Ala Ser Val Ser Ala Asn Leu Lys Lys Asp Tyr Val Leu Leu Ala
                195                200                205
Tyr Ala Lys Gly Leu Ser Pro Phe Lys Val Leu Ile Lys His Ile Leu
                210                215                220
Pro Tyr Ala Leu Phe Pro Val Ile Ser Tyr Ser Ala Phe Leu Ile Thr
                225                230                235
Thr Leu Met Thr Gly Thr Phe Ser Ile Glu Asn Leu Phe Cys Ile Pro
                245                250                255
Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
                260                265                270
Ile Thr Leu Gly Leu Ser Val Phe Tyr Gly Ala Phe Phe Met Leu Thr
                275                280                285
Ser Leu Cys Cys Asp Leu Leu Gln Ala Trp Ile Asp Pro Gln Ile Arg
                290                295                300
Tyr Ser Tyr Gly Lys Glu Arg Ser Lys
305                310

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<210> 592

<211> 1237

<212> PRT

<213> C. Trachomatis D serovar

<400> 592

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Met Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser Ile Leu Asp
1                5                10                15
Ala Thr Cys Ser Ile Lys Lys Phe Val Ala Lys Ala Val Glu Tyr Gln
                20                25                30
Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Phe Gly Ala Val
35                40                45
Glu Phe Tyr Lys Thr Cys Lys Gln Asn Ala Ile Lys Pro Ile Ile Gly
50                55                60
Cys Glu Leu Tyr Val Ala Pro Ser Ser Arg Phe Asp Lys Lys Lys Glu
65                70                75                80
Arg Lys Ser Arg Val Ala Asn His Leu Ile Leu Leu Cys Lys Asp Glu
85                90                95
Glu Gly Tyr Arg Asn Leu Cys Leu Leu Ser Ser Leu Ala Tyr Thr Glu
100                105                110
Gly Phe Tyr Tyr Val Pro Arg Ile Asp Arg Asp Leu Leu Ser Gln His
115                120                125
Ser Lys Gly Leu Ile Cys Leu Ser Ala Cys Leu Ser Gly Ser Val Ala
130                135                140
Gln Ala Ala Leu Glu Ser Glu Glu Asp Leu Glu Lys Asp Leu Leu Trp
145                150                155                160
Tyr Gln Asp Leu Phe Gln Glu Asp Phe Phe Ser Glu Val Gln Leu His
165                170                175
Lys Ser Ser Glu Glu Lys Val Ala Leu Phe Glu Glu Thr Trp Leu Lys
180                185                190
Gln Asn Tyr Tyr Gln Phe Ile Glu Lys Gln Leu Lys Val Asn Glu Ala
195                200                205
Val Leu Ala Thr Ser Lys Arg Leu Gly Ile Pro Ser Val Ala Thr Asn
210                215                220
Asp Ile His Tyr Leu Asn Pro Asp Asp Trp Leu Ala His Glu Ile Leu
225                230                235                240
Leu Asn Val Gln Ser Arg Glu Pro Ile Arg Thr Ala Lys Gln Asn Thr
245                250                255
Tyr Ile Pro Asn Pro Lys Arg Lys Thr Tyr Pro Ser Arg Glu Phe Tyr
260                265                270
Phe Lys Ser Pro Gln Glu Ile Ala Glu Leu Phe Ala Ala His Pro Glu

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275 280 285
 Thr Ile Thr Asn Thr Cys Ile Val Ala Glu Arg Cys His Leu Glu Leu
 290 295 300
 Asp Phe Glu Thr Lys His Tyr Pro Ile Tyr Val Pro Glu Ala Leu Gln
 305 310 315 320
 Lys Lys Gly Ser Tyr Thr Glu Glu Glu Arg Tyr Lys Ala Ser Ser Ala
 325 330 335
 Phe Leu Glu Glu Leu Cys Glu Gln Gly Leu Thr Ser Lys Tyr Thr Pro
 340 345 350
 Glu Leu Leu Gly His Ile Ala Lys Lys Phe Pro Gly Glu Asp Pro Leu
 355 360 365
 Thr Leu Val Lys Glu Arg Leu Lys Leu Glu Ser Ser Ile Ile Ile Ser
 370 375 380
 Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile Ile Asn Trp
 385 390 395 400
 Ala Lys Asp His Gly Ile Pro Val Gly Pro Gly Arg Gly Ser Gly Ala
 405 410 415
 Gly Ser Val Met Leu Phe Leu Leu Gly Ile Thr Glu Ile Glu Pro Ile
 420 425 430
 Arg Phe Asp Leu Phe Phe Glu Arg Phe Ile Asn Pro Glu Arg Ile Ser
 435 440 445
 Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ile Gly Arg Glu Arg Val
 450 455 460
 Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val Ala Gln Ile
 465 470 475 480
 Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Ile Lys Asp Val Gly
 485 490 495
 Arg Thr Leu Asp Thr Pro Leu Ala Lys Val Asn Phe Ile Ala Lys His
 500 505 510
 Ile Pro Asp Leu Asn Ala Thr Ile Thr Ser Ala Leu Glu Ala Asp Pro
 515 520 525
 Glu Leu Arg Gln Leu Tyr Val Asp Asp Ala Glu Ala Glu Val Ile
 530 535 540
 Asp Met Ala Lys Lys Leu Glu Gly Ser Ile Arg Asn Thr Gly Val His
 545 550 555 560
 Ala Ala Gly Val Ile Ile Cys Gly Asp Pro Leu Thr Asn His Ile Pro
 565 570 575
 Ile Cys Val Pro Lys Asp Ser Ser Met Ile Ser Thr Gln Tyr Ser Met
 580 585 590
 Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Phe Leu Gly Leu
 595 600 605
 Lys Thr Leu Thr Gly Ile His Ile Ala Thr Gln Ala Ile Tyr Lys Lys
 610 615 620
 Thr Gly Ile Leu Leu Arg Ala Ala Thr Ile Pro Leu Asp Asp Gln Asn
 625 630 635 640
 Thr Phe Ser Leu Leu His Gln Gly Lys Thr Met Gly Ile Phe Gln Met
 645 650 655
 Glu Ser Arg Gly Met Gln Asp Leu Ala Lys Asn Leu Arg Pro Asp Ala
 660 665 670
 Phe Glu Glu Ile Ile Ala Ile Gly Ala Leu Tyr Arg Pro Gly Pro Met
 675 680 685
 Asp Met Ile Pro Ser Phe Ile Asn Arg Lys His Gly Lys Glu Asn Ile
 690 695 700
 Glu Tyr Asp His Pro Leu Met Glu Pro Ile Leu Lys Glu Thr Phe Gly
 705 710 715 720
 Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly Ser Leu Ala
 725 730 735
 Lys Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala Met Gly Lys
 740 745 750
 Lys Asp His Glu Gln Met Val Lys Glu Arg Glu Lys Phe Cys Ser Arg
 755 760 765

Ala Ala Ala Asn Gly Ile Asp Pro Ser Ile Ala Thr Thr Ile Phe Asp
 770 775 780
 Lys Met Glu Lys Phe Ala Ser Tyr Gly Phe Asn Lys Ser His Ala Ala
 785 790 795 800
 Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys Ala Asn Tyr
 805 810 815
 Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Tyr Asp Ile
 820 825 830
 Glu Lys Val Gly Lys Leu Ile Gln Glu Ala His Ser Met Asn Ile Leu
 835 840 845
 Val Leu Pro Pro Asp Ile Asn Glu Ser Gly Gln Asp Phe Glu Ala Thr
 850 855 860
 Gln Lys Gly Ile Arg Phe Ser Leu Gly Ala Val Lys Gly Val Gly Met
 865 870 875 880
 Ser Ile Val Asp Ser Ile Val Glu Glu Arg Glu Lys Asn Gly Pro Tyr
 885 890 895
 Lys Ser Leu Gln Asp Phe Val Gln Arg Ala Asp Phe Lys Lys Val Thr
 900 905 910
 Lys Lys Gln Leu Glu Asn Leu Val Asp Ala Gly Thr Phe Asp Cys Phe
 915 920 925
 Glu Pro Asn Lys Asp Leu Ala Leu Ala Ile Leu Asn Asp Leu Tyr Asp
 930 935 940
 Thr Phe Ser Arg Glu Lys Lys Glu Ala Ala Thr Gly Val Leu Thr Phe
 945 950 955 960
 Phe Ser Leu Asp Ser Met Ala Arg Asp Pro Val Lys Ile Thr Val Ser
 965 970 975
 Pro Glu Asn Val Ile Gln Arg Ser Pro Lys Glu Leu Leu Lys Arg Glu
 980 985 990
 Lys Glu Leu Leu Gly Val Tyr Leu Thr Ala His Pro Met Asp Ala Val
 995 1000 1005
 Glu His Met Leu Pro Phe Leu Ser Val Val Pro Ala Arg Asp Phe Glu
 1010 1015 1020
 Gly Leu Pro His Gly Thr Ile Ile Arg Thr Val Phe Leu Ile Asp Lys
 1025 1030 1035 1040
 Val Thr Thr Lys Ile Ser Ser Ala Glu Gln Lys Lys Phe Ala Leu Leu
 1045 1050 1055
 Gln Val Ser Asp Glu Val Asp Ser Tyr Glu Leu Pro Ile Trp Ala Asp
 1060 1065 1070
 Met Tyr Ala Glu Tyr Arg Asp Leu Leu Glu Glu Asp Arg Leu Ile Tyr
 1075 1080 1085
 Ala Ile Leu Ala Ile Asp Arg Arg Ser Asp Ser Leu Arg Leu Ser Cys
 1090 1095 1100
 Arg Trp Met Arg Asp Leu Ser Thr Val Asn Asp Ser Val Ile Ala Glu
 1105 1110 1115 1120
 Cys Asp Glu Val Tyr Asp Arg Leu Lys Ser Gln Lys Val Tyr Ser Ser
 1125 1130 1135
 Thr Lys Lys Ser Thr Gly Ala Gln Ser Ser Ala Met Ile Lys Lys Val
 1140 1145 1150
 Glu Thr Arg Glu Ile Ser Pro Val Thr Ile Ser Leu Asp Leu Asn Lys
 1155 1160 1165
 Leu Arg His Ser His Leu Phe Ile Leu Lys Gly Leu Ile Arg Lys Tyr
 1170 1175 1180
 Ser Gly Ser Gln Ala Leu Ser Leu Val Phe Thr Lys Asp Asn Gln Arg
 1185 1190 1195 1200
 Phe Ala Ser Ile Ser Pro Asp Ala Asp Phe Phe Val Thr Asp Asp Ile
 1205 1210 1215
 Ser Ser Leu Leu Gln Glu Ile Glu Ala Thr Asn Ile Pro Ala Arg Val
 1220 1225 1230
 Leu Ala Thr Thr Val
 1235

<210> 593
 <211> 563
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 593
 Met Val Tyr Phe Arg Ala His Gln Pro Arg His Thr Pro Lys Thr Phe
 1 5 10 15
 Pro Leu Glu Val His His Ser Phe Ser Asp Lys His Pro Gln Ile Ala
 20 25 30
 Lys Ala Met Arg Ile Thr Gly Ile Ala Leu Ala Ala Leu Ser Leu Leu
 35 40 45
 Ala Val Val Ala Cys Val Ile Ala Val Ser Ala Gly Gly Ala Ala Ile
 50 55 60
 Pro Leu Ala Val Ile Ser Gly Ile Ala Val Met Ser Gly Leu Leu Ser
 65 70 75 80
 Ala Ala Thr Ile Ile Cys Ser Ala Lys Lys Ala Leu Ala Gln Arg Lys
 85 90 95
 Gln Lys Gln Leu Glu Glu Ser Leu Pro Leu Asp Asn Ala Thr Glu His
 100 105 110
 Val Ser Tyr Leu Thr Ser Asp Thr Ser Tyr Phe Asn Gln Trp Glu Ser
 115 120 125
 Leu Gly Ala Leu Asn Lys Gln Leu Ser Gln Ile Asp Leu Thr Ile Gln
 130 135 140
 Ala Pro Glu Lys Lys Leu Leu Lys Glu Val Leu Gly Ser Arg Tyr Asp
 145 150 155 160
 Ser Ile Asn His Ser Ile Glu Glu Ile Ser Asp Arg Phe Thr Lys Met
 165 170 175
 Leu Ser Leu Leu Arg Leu Arg Glu His Phe Tyr Arg Gly Glu Glu Arg
 180 185 190
 Tyr Ala Pro Tyr Leu Ser Pro Pro Leu Leu Asn Lys Asn Arg Leu Leu
 195 200 205
 Thr Gln Ile Thr Ser Asn Met Ile Arg Met Leu Pro Lys Ser Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Ala Asn Thr Leu Ser His Ala Ser Arg Thr Leu
 225 230 235 240
 Tyr Thr Val Leu Lys Val Ala Leu Ser Leu Gly Val Leu Ala Gly Val
 245 250 255
 Ala Ala Leu Ile Ile Phe Leu Pro Pro Ser Leu Pro Phe Ile Ala Val
 260 265 270
 Ile Gly Val Ser Ser Leu Ala Leu Gly Met Ala Ser Phe Leu Met Ile
 275 280 285
 Arg Gly Ile Lys Tyr Leu Leu Glu His Ser Pro Leu Asn Arg Lys Gln
 290 295 300
 Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
 305 310 315 320
 Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
 325 330 335
 Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
 340 345 350
 His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
 355 360 365
 Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
 370 375 380
 Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
 385 390 395 400
 Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
 405 410 415
 Asp Ser Asn Ser Glu Phe Gln Glu Ile Ile Asn Lys Gly Leu Glu Ala
 420 425 430
 Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp

435 440 445
 Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu
 450 455 460
 Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln
 465 470 475 480
 Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys
 485 490 495
 Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys
 500 505 510
 Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser
 515 520 525
 Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg
 530 535 540
 Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu
 545 550 555 560
 Asp Asn His

<210> 594

<211> 1751

<212> PRT

<213> C. Trachomatis D serovar

<400> 594

Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ser
 1 5 10 15
 Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg
 20 25 30
 Val Gly Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Val Gly Glu Ala
 35 40 45
 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr
 50 55 60
 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser
 65 70 75 80
 Ser Ser Asn Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr
 85 90 95
 Thr Thr Thr Pro Asp Pro Lys Gly Gly Glu Ala Phe Tyr Asn Ala His
 100 105 110
 Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu
 115 120 125
 Thr Leu Ser Glu Ile Lys Ile Thr Gly Glu Gly Glu Ala Ile Phe Ser
 130 135 140
 Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Gly Leu Thr Ile Gln Asn
 145 150 155 160
 Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Glu Ser Thr Ile
 165 170 175
 Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Ser Asn Ser Ala Glu
 180 185 190
 Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala
 195 200 205
 Ser Glu Thr Ser Gly Ser Ser Ser Ser Gly Asn Asp Ser Val Ser
 210 215 220
 Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn Leu Gln Ser
 225 230 235 240
 His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr Asp Thr Glu
 245 250 255
 Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala Ile Tyr Ala
 260 265 270
 Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu Phe Ser Ile
 275 280 285
 Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu Lys Asp Val

290		295		300
Ser Phe Glu Asn Ile Thr	Ser Leu Lys Val Gln Thr Asn Gly Ala Glu			
305	310	315	320	
Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser Ile Gln Ser				
	325	330	335	
Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln Gly Gly Gly				
	340	345	350	
Ala Leu Tyr Val Glu Gly Asp Ile Asn Phe Gln Asp Leu Glu Glu Ile				
	355	360	365	
Arg Ile Lys Tyr Asn Lys Ala Gly Thr Phe Glu Thr Lys Lys Ile Thr				
	370	375	380	
Leu Pro Lys Ala Gln Ala Ser Ala Gly Asn Ala Asp Ala Trp Ala Ser				
	385	390	395	400
Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly				
	405	410	415	
Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala				
	420	425	430	
Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr				
	435	440	445	
Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val				
	450	455	460	
Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His				
	465	470	475	480
Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Gly Ile				
	485	490	495	
Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu				
	500	505	510	
Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Leu Phe Ile Lys				
	515	520	525	
Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu				
	530	535	540	
Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys				
	545	550	555	560
Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile				
	565	570	575	
Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly				
	580	585	590	
Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu				
	595	600	605	
Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly				
	610	615	620	
Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln				
	625	630	635	640
Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val				
	645	650	655	
Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Thr Val Ser Ser Leu				
	660	665	670	
Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys				
	675	680	685	
Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val				
	690	695	700	
Val Asp Thr Thr Ile Ser Lys Asn Thr Ala Lys Lys Gly Gly Gly Ile				
	705	710	715	720
Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser				
	725	730	735	
Glu Asn Ser Ala Thr Glu Ile Gly Gly Gly Ile Cys Cys Lys Glu Ser				
	740	745	750	
Leu Glu Leu Asp Ala Leu Val Ser Leu Ser Val Thr Glu Asn Leu Val				
	755	760	765	
Gly Lys Glu Gly Gly Gly Leu His Ala Lys Thr Val Asn Ile Ser Asn				
	770	775	780	

Leu Lys Ser Gly Phe Ser Phe Ser Asn Asn Lys Ala Asn Ser Ser Ser
 785 790 795 800
 Thr Gly Val Ala Thr Thr Ala Ser Ala Pro Ala Ala Ala Ala Ser
 805 810 815
 Leu Gln Ala Ala Ala Val Pro Ser Ser Pro Ala Thr Pro Thr
 820 825 830
 Tyr Ser Gly Val Val Gly Gly Ala Ile Tyr Gly Glu Lys Val Thr Phe
 835 840 845
 Ser Gln Cys Ser Gly Thr Cys Gln Phe Ser Gly Asn Gln Ala Ile Asp
 850 855 860
 Asn Asn Pro Ser Gln Ser Ser Leu Asn Val Gln Gly Gly Ala Ile Tyr
 865 870 875 880
 Ala Lys Thr Ser Leu Ser Ile Gly Ser Ser Asp Ala Gly Thr Ser Tyr
 885 890 895
 Ile Phe Ser Gly Asn Ser Val Ser Thr Gly Lys Ser Gln Thr Thr Gly
 900 905 910
 Gln Ile Ala Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Leu Asn Cys
 915 920 925
 Pro Ala Thr Phe Ser Asn Asn Thr Ala Ser Met Ala Thr Pro Lys Thr
 930 935 940
 Ser Ser Glu Asp Gly Ser Ser Gly Asn Ser Ile Lys Asp Thr Ile Gly
 945 950 955 960
 Gly Ala Ile Ala Gly Thr Ala Ile Thr Leu Ser Gly Val Ser Arg Phe
 965 970 975
 Ser Gly Asn Thr Ala Asp Leu Gly Ala Ala Ile Gly Thr Leu Ala Asn
 980 985 990
 Ala Asn Thr Pro Ser Ala Thr Ser Gly Ser Gln Asn Ser Ile Thr Glu
 995 1000 1005
 Lys Ile Thr Leu Glu Asn Gly Ser Phe Ile Phe Glu Arg Asn Gln Ala
 1010 1015 1020
 Asn Lys Arg Gly Ala Ile Tyr Ser Pro Ser Val Ser Ile Lys Gly Asn
 1025 1030 1035 1040
 Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln

1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325
 Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
 1395 1400 1405
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg
 1410 1415 1420
 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met
 1425 1430 1435 1440
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg
 1445 1450 1455
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
 1460 1465 1470
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr
 1475 1480 1485
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe
 1490 1495 1500
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile
 1505 1510 1515 1520
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
 1525 1530 1535
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln
 1540 1545 1550
 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
 1555 1560 1565
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
 1570 1575 1580
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile
 1585 1590 1595 1600
 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr
 1605 1610 1615
 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
 1620 1625 1630
 Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn
 1635 1640 1645
 Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys
 1650 1655 1660
 Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile
 1665 1670 1675 1680
 Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu
 1685 1690 1695
 Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala
 1700 1705 1710
 Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe Trp Thr Leu Tyr Gly
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 Cys Gly Ala Arg Met Ile Phe
 1745 1750

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 <212> DNA
 <213> Chlamydia pneumoniae

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 acatgggtgac cgattttacaa aattttctctc cagtctttggg aatttaggaaa atttcaatgaa 180
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 cgcgtttgag ctttcttagc atcaactcta gcttcagcaa ttactgtgtg gacctatata 840
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 <212> DNA
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 gatattaata aagactttgt cgtagttgat gttggtctga agtctgaggg agtgatccct 240
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 caacgtcaat gggaaatcat cttagctcat tgtgaagaag gttctattgt taaaggtcaa 420
 attacacgta aagtcaaaag cggccttatt gtatgatatt gaattggaag cttctacact 480
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Ala	Gly	Ala 35	Thr	Ile	Ile	Val	Gly 40	Thr	Trp	Val	Pro	Ile 45	Tyr	Lys	Ile
Phe	Ser 50	Gln	Ser	Trp	Glu	Leu 55	Gly	Lys	Phe	Asn	Glu 60	Ser	Arg	Lys	Leu
Ser	Asn 65	Gly	Thr	Leu	Leu 70	Glu	Ile	Ala	Lys	Ile 75	Tyr	Pro	Met	Asp	Ala 80
Ser	Phe	Asp	Ser	Pro 85	Glu	Asp	Val	Pro	Glu 90	Asp	Ile	Ala	Glu	Asn 95	Lys
Arg	Tyr	Lys	Gly 100	Ile	Thr	Gly	Phe	Thr 105	Ile	Ser	Glu	Val	Ala 110	Glu	Gln
Val	Lys	Lys 115	Asp	Phe	Gly	His	Ile 120	Asp	Ile	Leu	Val	His 125	Ser	Leu	Ala
Asn	Ser 130	Pro	Glu	Ile	Ser	Lys 135	Ser	Leu	Leu	Glu	Thr 140	Ser	Arg	Lys	Gly
Tyr	Leu 145	Ala	Ala	Leu	Ser 150	Ala	Ser	Ser	Tyr	Ser 155	Phe	Val	Ser	Leu	Leu 160
Ser	His	Phe	Gly	Ser 165	Ile	Met	Asn	Arg	Gly 170	Gly	Ser	Thr	Ile	Ser 175	Leu
Thr	Tyr	Leu 180	Ala	Ser	Met	Arg	Ala	Val 185	Pro	Gly	Tyr	Gly	Gly 190	Gly	Met
Ser	Ser	Ala 195	Lys	Ala	Ala	Leu	Glu 200	Ser	Asp	Thr	Lys	Thr 205	Leu	Ala	Trp
Glu	Ala 210	Gly	Arg	Arg	Trp	Gly 215	Ile	Arg	Val	Asn	Thr 220	Ile	Ser	Ala	Gly
Pro	Leu 225	Ala	Ser	Arg	Ala 230	Gly	Lys	Ala	Ile	Gly 235	Phe	Ile	Glu	Arg	Met 240
Val	Asp	Tyr	Tyr	Gln 245	Glu	Trp	Ala	Pro	Ile 250	Pro	Glu	Ala	Met	Asn 255	Ala
Glu	Gln	Val	Gly 260	Ala	Val	Ala	Ala	Phe 265	Leu	Ala	Ser	Pro	Leu 270	Ala	Ser
Ala	Ile 275	Thr	Gly	Glu	Thr	Leu	Tyr 280	Val	Asp	His	Gly	Ala 285	Asn	Val	Met
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290

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<212> PRT
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35 40 45
Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
50 55 60
Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
65 70 75 80
Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
85 90 95
Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
100 105 110
Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
115 120 125
Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
130 135 140
Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
145 150 155
Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
165 170 175
Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
180 185 190
Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
195 200 205
Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
210 215 220
Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
225 230 235 240
Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
245 250 255
Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
260 265 270
Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
275 280 285

295

Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
 340 345 350
 Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
 355 360 365
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430
 Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
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<211> 358

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 599

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Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
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Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
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Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Gly Tyr Lys Glu Arg Val
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Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
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Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
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Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
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Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
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Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
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Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
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Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
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Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Ser Phe Leu Glu Gln Phe
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Val Ala Asp Ser Pro Gly Asp Ile Ile Asp Phe Asp Thr Gln Gln Val
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Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
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Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
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Asn Met Glu Lys Asn Ile Val Tyr Ile Val Arg Gly Glu Asp His Pro
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Leu Leu Tyr Arg Gln Glu Leu Leu Ala Lys Glu Leu Asn Trp Phe Val
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Pro Leu Gln Glu Pro Met Ile Cys Ser Ala Lys Val Arg Tyr Arg Ser
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Pro Asp Glu Lys Cys Ser Val Tyr Pro Leu Glu Asp Gly Thr Val Lys
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Val Ile Phe Asp Val Pro Val Lys Ala Val Thr Pro Gly Gln Thr Val
325 330 335

Ala Phe Tyr Gln Gly Asp Ile Cys Leu Gly Gly Gly Val Ile Glu Val
340 345 350

Pro Met Ile His Gln Leu
355